

EXHIBIT WW

U.S. Patent No. 10,951,680 to Brazzers

The following claim chart shows exemplary aspects of certain streaming services and products provided by MG Premium Ltd or any other Defendants, using the Brazzers premium website, available at www.brazzers.com (“Brazzers Premium Site”), that infringe claim 22 of the ’680 Patent. The chart is exemplary and should not be read to limit DISH’s assertions against Brazzers, MG Premium Ltd, or any other Defendant as to the services or products described below. The chart should not be read to limit DISH’s assertions to the patent claim charted below. Nor should the chart below be read to limit how Brazzers, MG Premium Ltd, and/or any other Defendant infringes the claim below.

Claim Element	Example Infringement Evidence
<p>[22.pre] A process executable by one or more servers to stream a video for playback by one or more end user stations, the process comprising:</p>	<p>The Brazzers Premium Site provides information that permits an end user device to stream a video over a network from a server for playback of the video. The streams are obtained from one or more video servers connecting to Brazzers over a network. As described in greater detail below, a media player embedded in the web page and executed based on instructions from the Brazzers Premium Site plays back programming over a network connection.</p> <p>The images in this chart are from the Brazzers Premium Site through a web browser, such as Microsoft Edge, Google Chrome, or iOS Safari. In addition, the media player embedded in the web page Brazzers Premium Site is available to run on content player devices supporting all the latest versions of major web browsers. <i>See</i> https://www.support.brazzers.com/technical/ (“[Brazzers] support[s] all the latest versions of major web browsers....”).</p> <p>Tests were conducted on videos offered over the Brazzers Premium Site accessed on a personal computer. As part of the testing, the device accessing Brazzers Premium Site was connected to the internet through the Charles Proxy application, which enabled the ability to proxy the device’s network traffic, to view the device’s network traffic, and to throttle the network’s available bandwidth. Thus, the test simulated how Brazzers responded to lower and higher bandwidths. For the current test, a video titled “All Dolled Up – Try Me” was selected, and at various times throughout the playback of the video, bandwidth was restricted to download speeds of 2048 kbps. As observed through the tests, when the user selects a video from the available videos, the media player embedded in the web page of the Brazzers Premium Site displays more details regarding the video and provides the user with the option to view the video.</p> <p>Selecting the icon corresponding to a video causes that video and other materials to be streamed and displayed on the user’s device.</p>

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	<p>With respect to adaptively receiving the digital stream from the video server over the network, the media player embedded in the web page of the Brazzers Premium Site accesses adaptive bitrate streams from a server affiliated with the Brazzers Premium Site over a network using the HTTP Live Streaming (“HLS”) adaptive bitrate streaming protocol. HLS is “a protocol for transferring unbounded streams of multimedia data.” Request For Comments: 8216 – HTTP Live Streaming, August 2017 (“RFC 8216”) at 1. Using HLS, “a client can receive a continuous stream of media from a server for concurrent presentation.” RFC 8216 at 4. HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4. With HLS, “[c]lients should switch between different Variant Streams to adapt to network conditions.” RFC 8216 at 5.</p> <p>As explained in further detail below, the Brazzers Premium Site provides a video over a network from a server for playback on an end user device. The end user device obtains streams of a selected video program for playback from one or more servers.</p>										
[22.1] storing, by the one or more servers;	<p>Brazzers’s content is accessible for streaming video programs that are stored on one or more servers over a network.</p> <p>As shown by the Charles Proxy application file, partially reproduced below, the streamlet video files are hosted on a server and available at stream-private-ht.project1content.com.</p> <table><tr><th>Method</th><th>Host</th><th>Path¹</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-70-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path ¹	...	Status	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-70-f3-v1-a1.ts?...	...	Complete
Method	Host	Path ¹	...	Status							
GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-70-f3-v1-a1.ts?...	...	Complete							

¹ Video path abbreviated for readability throughout.

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Claim Element	Example Infringement Evidence					
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-71-f3-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-72-f3-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-73-f3-v1-a1.ts?...	...	Complete	
[22.2] one or more virtual timelines corresponding to a plurality of streams including a low quality stream, a medium quality stream, and	<p>The one or more servers accessible by the end user device store streamlets corresponding to particular segments of a video program, and each streamlet is encoded at one of numerous resolutions. The one or more servers stores virtual timelines corresponding to a plurality of streams of the video program. Each of the stored streams comprises a plurality of streamlets at the same resolution, and the virtual timelines ensure the sequential playback of the streams at a resolution supported by the available network bandwidth.</p> <p>The numerous streams of the video program accessible by the embedded media player include a low quality stream, a medium quality stream, and a high quality stream.</p>					

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a high quality stream,	<p>For example, in the instant test of a video titled “All Dolled Up—Try Me,” the end user station made an HTTP GET request to stream-private-hl.project1content.com for a master manifest located at the following path: /hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urls et/master.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D (hereafter referred to as the “Master Manifest” or “master.m3u8”). The Master Manifest returned the following contents:</p> <pre>#EXTM3U #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME- RATE=23.974,CODECS="avc1.640032,mp4a.40.2" index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</pre>

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	<div>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</div> <div>index-f5-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</div> <div>File path: master.m3u8</div> <div>The master playlist shows five versions of the video stream at the following bandwidths:<ul style="list-style-type: none">915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x3201654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x4803023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x7204816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x10806660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260</div> <div>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each variant or version playlist is defined by the token associated with the stream file path. For example:</div> <table><tr><th>Bandwidth</th><th>Token²</th></tr><tr><td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr></table>		Bandwidth	Token ²	915420 Bandwidth	index-f1-v1-a1.m3u8?...
Bandwidth	Token ²					
915420 Bandwidth	index-f1-v1-a1.m3u8?...					

² Token abbreviated for readability. The abbreviated portions of each token are the same across all bandwidth versions.

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Claim Element	Example Infringement Evidence	
	1654630 Bandwidth	index-f2-v1-a1.m3u8?...
	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
<p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>An end user station accessing the Brazzers Premium Site through a web browser uses HTTPS GET requests to retrieve the segments, or streamlets, of the encoded video specified in the file above.</p> <p>The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. <i>See</i> RFC 8216 at 38 (“The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played.”); <i>see also</i> RFC 8216 at 4 (“A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.”).</p>		

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	<p>As shown in the test data, the end user station accessing the Brazzers Premium Site selects the 3023543 Bandwidth version of the stream and makes a request for the corresponding variant playlist. The Brazzers's server(s) returns the playlist file with the following contents:</p> <pre> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, seg-1-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-2-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-3-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, </pre>

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	<p>seg-4-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p>seg-556-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-557-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-558-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p>seg-559-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">#EXT-X-ENDLIST</div> <p>The variant playlist file is a HLS playlist. Each line in the file path “index-f3-v1-a1.m3u8?...” that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the variant playlist shown above, the segments of the video are separated by commercial segments. Each of the streamlets (except the first and final streamlets of each playlist) is 4.000 seconds long and returns sequential segments of the video program and/or commercial.</p> <p>As long as the viewer continues watching the video and the bandwidth is adequate to support the chosen resolution, the end user device will continue to request (and Brazzers will provide) streamlets corresponding to the current, chosen resolution.</p>
<p>[22.3] wherein the low quality stream, the medium quality stream, and the high quality stream each comprise a group of streamlets encoded at a respective one of a plurality of different bitrates, each group comprising at least first and second streamlets, each of the streamlets</p>	<p>Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising the streamlets of the same quality—each variant playlist having at least a first and second streamlet.</p> <p>In the instant test, a personal computer accessing the Brazzers Premium Site through a web browser makes a HTTPS GET request to stream-private-ht.project1content.com for the Master Manifest. As shown in the excerpts of the Master Manifest below, the video available is encoded at 5 different bitrates.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>#EXTM3U</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> </div>

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corresponding to a portion of the video;	<p>index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p>

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Claim Element	Example Infringement Evidence								
	<div style="border: 1px solid black; padding: 5px;"> index-f5-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D </div> <p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token</th></tr> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> <tr> <td>3023543 Bandwidth</td><td>index-f3-v1-a1.m3u8?...</td></tr> </table>	Bandwidth	Token	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
Bandwidth	Token								
915420 Bandwidth	index-f1-v1-a1.m3u8?...								
1654630 Bandwidth	index-f2-v1-a1.m3u8?...								
3023543 Bandwidth	index-f3-v1-a1.m3u8?...								

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	4816531 Bandwidth	index-f4-v1-a1.m3u8?...			
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...			
	<p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>An end user station accessing the Brazzers Premium Site through a web browser uses HTTPS GET requests to retrieve the segments, or streamlets, of the encoded video specified in the file above.</p> <table><tr><th>Bandwidth</th><th>Streamlet</th></tr><tr><td>915420 Bandwidth</td><td>#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, seg-1-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</td></tr></table>		Bandwidth	Streamlet	915420 Bandwidth
Bandwidth	Streamlet				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, seg-1-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D				

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		<p>#EXTINF:4.000, seg-2-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, seg-3-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, seg-4-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, seg-5-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p>

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		<p>#EXTINF:3.000, seg-1-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, seg-2-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, seg-3-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, seg-4-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	<p>Upon information and belief, playlists for the other resolution variants also include these segments, which correspond to the same portion of the video provided on-demand from the Brazzers's server(s).</p>	

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Claim Element	Example Infringement Evidence
	<p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the Brazzers web page to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>The video server stores the video wherein “each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets.” The HLS protocol indicates that “[a] Media Playlist contains a list of Media Segments, which, when played sequentially, will play the multimedia presentation.” RFC 8216 at 4; <i>see also</i> RFC 8216 at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation.”).</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of</p>

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Claim Element	Example Infringement Evidence
	<p>the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p>
<p>[22.4] wherein at least one of the low quality stream, the medium quality stream, and the high quality stream is encoded at a bitrate of no less than 600 kbps; and</p>	<p>As explained above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate. At least one of the low, medium, and high-quality streams is encoded at a bit rate of no less than 600 kbps.</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260
<p>[22.5] wherein the streamlet encoding the same portion of the video in the low quality stream has an equal playback duration as the streamlet encoding the same portion of the</p>	<p>For the Brazzers video, the streamlet encoding the same portion of the video in the low quality stream has an equal playback duration as the streamlet encoding the same portion of the video in the high quality stream.</p> <p>Each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to streamlet encoding the same portion of the video in the high quality stream; allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. Further, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across</p>

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video in the high quality stream;	<p>different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user station uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The video files are hosted at stream-private-ht.project1content.com, and each streamlet (except the first and final streamlets) is 4.000 seconds long.</p> <p>The received playlists at each resolution includes video streamlets, such as: “seg-1-f[X]-v1-a1.ts,” “seg-2-f[X]-v1-a1.ts,” “seg-3-f[X]-v1-a1.ts,” “seg-4-f[X]-v1-a1.ts,” and “seg-5-f[X]-v1-a1.ts,” where [X] corresponds to a unique identifier for each bandwidth version. Within each bandwidth playlist file, there are the 559 .ts files, each corresponding to the same segmented moments in the video.</p> <table> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (<u>same portion of stream</u>)</th></tr> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-a1.ts</u>?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, </td></tr> </table>	Bandwidth Version	File line (#EXTINF: length) (<u>same portion of stream</u>)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-a1.ts</u> ?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,
Bandwidth Version	File line (#EXTINF: length) (<u>same portion of stream</u>)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-a1.ts</u> ?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,				

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Claim Element	Example Infringement Evidence
	<p><u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-557-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:4.000, <u>seg-558-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616, <u>seg-559-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000, <u>seg-1-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-2-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:4.000, <u>seg-3-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-4-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-5-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000, <u>seg-556-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-557-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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	<div> <div> <u>seg-558-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:0.616, <u>seg-559-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXT-X-ENDLIST </div> </div> <p>As provided above, HLS requires that “[m]atching content in Variant Streams MUST have matching timestamps” to allow Brazzers to synchronize the media. RFC 8216 at 43; <i>see also</i> RFC 8216 at 43 (“Matching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.”).</p> <p>The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are “in relation to the beginning of the video.” For example, HLS requires that “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6; <i>see also</i> RFC 8216 at 45 (“A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments.”).</p> <p>Indeed, to adapt playback between different bitrate Variant Streams, the end user station “can use the EXTINF durations and the constraints in Section 6.2.4 to determine the approximate location of corresponding media. Once media from the new Variant Stream has been loaded, the timestamps in the Media Segments can be used to synchronize the old and new timelines precisely.” RFC 8216 at 47.</p>

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<p>[22.6] and wherein the first streamlet of each of the groups of streamlets has the same first duration and encodes the same first portion of the video in the low quality stream, the medium quality stream, and the high quality stream, the first streamlet of the low quality stream having a different one of the different bitrates than the first streamlet of the high quality stream and the first streamlet of the medium quality stream;</p>	<p>As explained above, each streamlet encoding the same portion of the video in the low quality stream has an equal playback duration as the streamlet encoding the same portion of the video in the high quality stream.</p> <p>Each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to streamlet encoding the same portion of the video in the high quality stream; allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. Further, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow Brazzers to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user station uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The first streamlet of each of the variant playlists used to stream the video titled “All Dolled Up—Try Me” are the same duration (3.000 seconds) and encode the same portion of the video. The video streamlet files are hosted at stream-private-ht.project1content.com. This is illustrated below:</p> <table border="1"> <thead> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (same portion of stream)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 </td></tr> </tbody> </table>	Bandwidth Version	File line (#EXTINF: length) (same portion of stream)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3
Bandwidth Version	File line (#EXTINF: length) (same portion of stream)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3				

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	<p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: right;">[***]</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence	
		<p><u>seg-556-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-557-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-558-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p><u>seg-559-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p>

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Claim Element	Example Infringement Evidence
	<p><u>seg-1-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: right;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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	<p>#EXTINF:4.000, seg-557-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, seg-558-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616, seg-559-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>							
[22.7] receiving at least one virtual timeline request over one or more internet connections from the one or more end user stations to retrieve a virtual timeline correspond to the first streamlet storing the first	<p>The end user station accessing the Brazzers Premium Site places a virtual timeline request to Brazzers's server(s) over the internet connection for the selected stream and receives the requested streamlet from Brazzers's server(s) via the established internet connection between the end user station and the server(s).</p> <p>As part of the testing, Brazzers was connected to the internet through the Charles Proxy application. For the instant test, the the end user station accessing the Brazzers Premium Site selects the 915420 Bandwidth version of the stream as indicated by its request for the 915420 Bandwidth version playlist (<i>see</i> GET request for streamlets containing the "-f1-" indicator) and subsequently selects the 3023543 Bandwidth version as indicated by its request for the 3023543 Bandwidth version streamlets. Below is an excerpt of the Charles "Sequence" listing showing the same:</p> <table border="1"> <thead> <tr> <th>Method</th><th>Host</th><th>Path</th></tr> </thead> <tbody> <tr> <td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td></tr> </tbody> </table>		Method	Host	Path	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...
Method	Host	Path						
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...						

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portion of the video,	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	
	<p>Brazzers “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player, “[t]he client,” which is the media player, “SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to playback normally, the end user station must request a plurality of files with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p> <p>As shown above, although the end user station initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted.</p>			
[22.8] wherein the at least one streamlet request from the one or more end user stations includes a request for a currently selected first streamlet from one of the low quality stream,	<p>The end user station receives the requested streamlets from the video servers via the one or more network connections.</p> <p>In response to requesting the first streamlet via an HTTP GET request, as shown above, the end user station receives the requested streamlet from the server via the one or more network connections. <i>See e.g.</i>, RFC 8216 at 4 (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”); <i>id.</i> at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”).</p>			

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Claim Element	Example Infringement Evidence																									
the medium quality stream, and the high quality stream based upon a determination by the end user station to select a higher or lower bitrate version of the video;	<p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station accessing Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete																						
[22.9] retrieving from the storage device the requested virtual timeline for the currently selected one of the low quality stream, the	<p>The embedded media player shown on Brazzers Premium Site retrieves the requested streamlets for playback of the video from the one or more servers storing the streamlets.</p> <p>HLS provides that “[n]ormal playback can be achieved by playing the Media Segments in the order that they appear in the Playlist.” RFC 8216 at 45. In this regard, as explained above, HLS requires that “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue</p>																									

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Claim Element	Example Infringement Evidence				
medium quality stream, and the high quality stream; and	uninterrupted.” RFC 8216 at 6. That is, the embedded media player plays back the requested virtual timeline of .ts media files in order of ascending playback time after they are retrieved.				
	Likewise, the below chart shows the streamlets of the video program being requested (and subsequently presented) in ascending chronological order from the video program start time:				
	Method	Host	Path	...	Status
	GET	stream-private-ht.project1content.com	.../hls/.../seg-43-f1-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-44-f1-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-45-f1-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-46-f1-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-47-f1-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-48-f3-v1-a1.ts?...	...	Complete
GET	stream-private-ht.project1content.com	.../hls/.../seg-49-f3-v1-a1.ts?...	...	Complete	
[22.10] sending the retrieved virtual timeline to the requesting one of the end user	The Brazzers’s server(s) provides the streamlets of the video program to the end user device over a network connection via the media player embedded in the web page of the Brazzers Premium Site. Brazzers confirms that its media player provides video playback to end user stations over a network connection on the Brazzers support webpage, https://www.support.brazzers.com . There, Brazzers troubleshoots problems				

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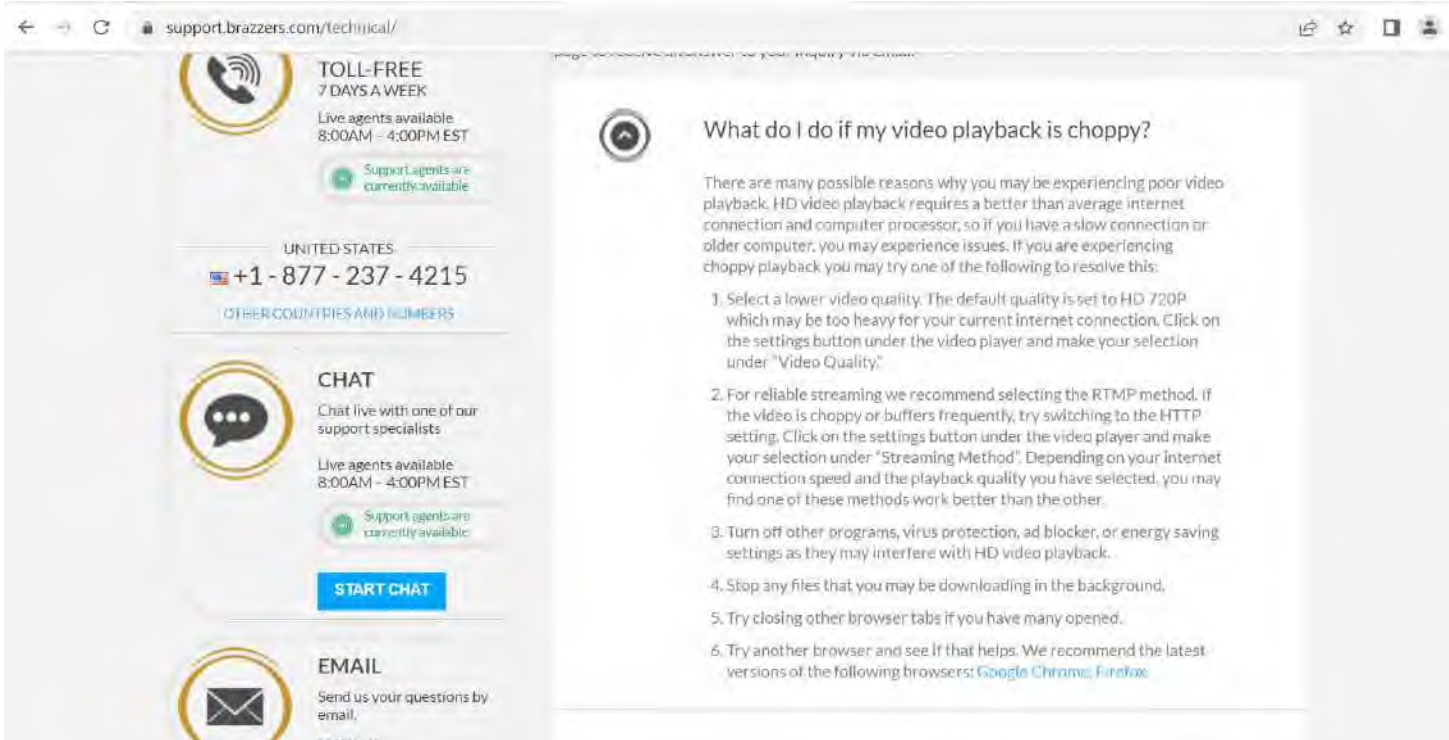
Claim Element	Example Infringement Evidence
stations over the one or more network connections.	<p>end users may have with HLS and instructs users on how to optimize their video playback experience. <i>See</i> https://www.support.brazzers.com/technical.</p>  <p>The screenshot shows a web browser window with the URL support.brazzers.com/technical/. The page has a light gray background with a white sidebar on the left containing navigation links: TOLL-FREE (7 DAYS A WEEK, 8:00AM - 4:00PM EST), CHAT (Live agents available 8:00AM - 4:00PM EST), and EMAIL. The main content area is titled 'What do I do if my video playback is choppy?' and contains a list of six troubleshooting steps. The steps are: 1. Select a lower video quality. 2. For reliable streaming we recommend selecting the RTMP method. 3. Turn off other programs, virus protection, ad blocker, or energy saving settings. 4. Stop any files that you may be downloading in the background. 5. Try closing other browser tabs if you have many opened. 6. Try another browser and see if that helps. The page also includes a 'START CHAT' button and a 'Support agents are currently available' status indicator.</p>

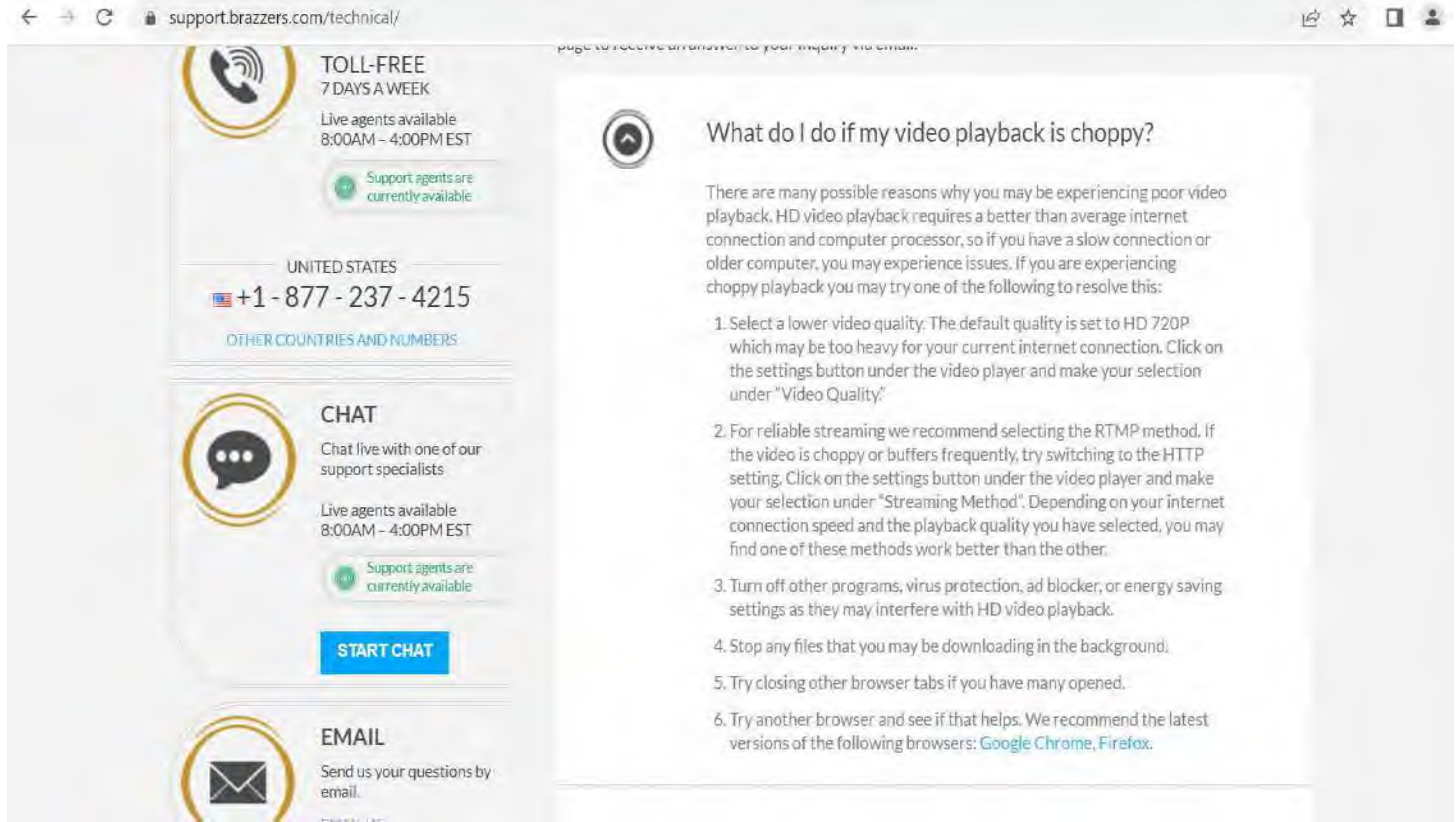
EXHIBIT XX

U.S. Patent No. 11,677,798 to Brazzers

The following claim chart shows exemplary aspects of certain streaming services and products provided by MG Premium Ltd or any other Defendants, using the Brazzers premium website, available at www.brazzers.com (“Brazzers Premium Site”), that infringe claim 1 of the ’798 Patent. The chart is exemplary and should not be read to limit DISH’s assertions against Brazzers, MG Premium Ltd, or any other Defendant the services or products described below. The chart should not be read to limit DISH’s assertions to the patent claim charted below. Nor should the chart below be read to limit how Brazzers, MG Premium Ltd, and/or any other Defendant infringe the claim below.

Claim Element	Example Infringement Evidence
[1.pre] A system for adaptive-rate content streaming of digital content playable on one or more end user stations over the Internet, the system comprising:	<p>The Brazzers Premium Site provides information that permits an end user device to stream a video over a network from a server for playback of the video. The streams include live streams that are obtained from one or more servers affiliated with the Brazzers Premium Site over a network.</p> <p>The images in this chart are from the Brazzers Premium Site through a web browser, such as Microsoft Edge, Google Chrome, or iOS Safari. In addition, the media player embedded in the web page and executed based on instructions from the Brazzers Premium Site is available to run on media player devices supporting all the latest versions of major web browsers. <i>See</i> https://www.support.brazzers.com/technical/ (“[Brazzers] support[s] all the latest versions of major web browsers....”). <i>See also id.</i> (showing, in part, that an internet connection is required in order to stream videos):</p>

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Claim Element	Example Infringement Evidence
	 <p>The screenshot shows the support.brazzers.com/technical/ page. On the left, there are three contact options: TOLL-FREE (7 DAYS A WEEK, Live agents available 8:00AM - 4:00PM EST, Support agents are currently available), CHAT (Chat live with one of our support specialists, Live agents available 8:00AM - 4:00PM EST, Support agents are currently available, START CHAT button), and EMAIL (Send us your questions by email). On the right, there is a section titled 'What do I do if my video playback is choppy?' with a list of six troubleshooting steps: 1. Select a lower video quality, 2. For reliable streaming we recommend selecting the RTMP method, 3. Turn off other programs, virus protection, ad blocker, or energy saving settings, 4. Stop any files that you may be downloading in the background, 5. Try closing other browser tabs if you have many opened, 6. Try another browser and see if that helps. We recommend the latest versions of the following browsers: Google Chrome, Firefox.</p> <p>https://www.support.brazzers.com/technical/</p> <p>Tests were conducted on videos offered over the Brazzers Premium Site accessed on a personal computer. As part of the testing, the device accessing Brazzers Premium Site was connected to the internet through the Charles Proxy application, which enabled the ability to proxy the device's network traffic, to view the device's network traffic, and to throttle the network's available bandwidth. Thus, the test simulated how Brazzers responded to lower and higher bandwidths. For the current test, a video titled "All Dolled Up – Try Me" was selected, and at various times throughout the playback of the video, bandwidth was restricted to download speeds of 2048 kbps.</p>

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Claim Element	Example Infringement Evidence									
	<p>As observed through the tests, when a user selects a video from the available videos, the media player embedded in the web page and executed based on instructions from Brazzers Premium Site displays more details regarding the video and provides the user with the option to view the video.</p> <p>Selecting the icon corresponding to a video causes that video and other materials to be streamed and displayed on the user’s device.</p> <p>With respect to adaptively receiving the digital stream from the video server over the network, the media player embedded in the Brazzers Premium Site accesses adaptive bitrate streams from a server affiliated with the Brazzers Premium Site over a network using the HTTP Live Streaming (“HLS”) adaptive bitrate streaming protocol. HLS is “a protocol for transferring unbounded streams of multimedia data.” Request For Comments: 8216 – HTTP Live Streaming, August 2017 (“RFC 8216”) at 1. Using HLS, “a client can receive a continuous stream of media from a server for concurrent presentation.” RFC 8216 at 4. HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4. With HLS, “[c]lients should switch between different Variant Streams to adapt to network conditions.” RFC 8216 at 5.</p> <p>As explained in further detail below, Brazzers provides a system for adaptive-rate internet streaming of digital content playable on an end user device.</p>									
[1.1] at least one storage device storing digital content,	<p>The media player embedded in the web page and executed based on instructions from the Brazzers Premium Site accesses streams of video programs that are stored on one or more servers over a network.</p> <p>As shown by the Charles Proxy application file, partially reproduced below, the streamlet video files are hosted on a server accessible via stream-private-ht.project1content.com.</p> <table><tr><th>Method</th><th>Host</th><th>Path¹</th><th>...</th><th>Status</th></tr></table>					Method	Host	Path ¹	...	Status
Method	Host	Path ¹	...	Status						

¹ Video path abbreviated for readability throughout.

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Claim Element	Example Infringement Evidence					
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-70-f3-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-71-f3-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-72-f3-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-73-f3-v1-a1.ts?...	...	Complete	
[1.2] the digital content encoded at a plurality of	The one or more servers hosting Brazzers video programs store streamlets corresponding to particular segments of a video program, and each streamlet is encoded at one of numerous resolutions.					

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Claim Element	Example Infringement Evidence
different bit rates creating a plurality of streams including a first bit rate stream, a second bit rate stream, and a third bit rate stream,	<p>The numerous streams of the video program accessible by the media player embedded in the web page of the Brazzers Premium Site include a low quality stream, a medium quality stream, and a high quality stream.</p> <p>For example, in the instant test of a video titled “All Dolled Up—Try Me,” a personal computer accessing the Brazzers Premium Site through a web browser made an HTTP GET request to stream-private-ht.project1content.com for a master manifest located at the following path: /hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urls et/master.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D (hereafter referred to as the “Master Manifest” or “master.m3u8”). The Master Manifest returned the following contents:</p> <pre>#EXTM3U #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME- RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</pre>

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Claim Element	Example Infringement Evidence		
	<div> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p> <p>index-f5-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each variant playlist, or version playlist, is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token²</th></tr> </table>	Bandwidth	Token ²
Bandwidth	Token ²		

² Token abbreviated for readability. The abbreviated portions of each token are the same across all bandwidth versions.

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Claim Element	Example Infringement Evidence	
	915420 Bandwidth	index-f1-v1-a1.m3u8?...
	1654630 Bandwidth	index-f2-v1-a1.m3u8?...
	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
<p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>A personal computer accessing the Brazzers Premium Site through a web browser uses HTTPS GET requests to retrieve the segments, or streamlets, of the encoded video specified in the file above from the one or more servers hosting Brazzers content.</p> <p>The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. <i>See</i> RFC 8216 at 38 (“The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played.”); <i>see also</i> RFC 8216 at 4 (“A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist.”); RFC 8216 at 4 (“A</p>		

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Claim Element	Example Infringement Evidence
	<p>Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.”).</p> <p>As shown in the test data, Brazzers selects the 3023543 Bandwidth version of the stream and makes a request for the corresponding playlist. The Brazzers’s server(s) returns the playlist file with the following contents:</p> <pre> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, seg-1-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-2-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-3-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</pre>

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Claim Element	Example Infringement Evidence
	<p>seg-4-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p>seg-556-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-557-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-558-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p>seg-559-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">#EXT-X-ENDLIST</div> <p>The variant playlist file is a HLS playlist. Each line in the file path “index-f3-v1-a1.m3u8?...” that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the variant playlist shown above, the segments of the video are separated by commercial segments. Each of the streamlets (except the first and final streamlets of each playlist) is 4.000 seconds long and returns sequential segments of the video program and/or commercial.</p> <p>As long as the viewer continues watching the video and the bandwidth is adequate to support the chosen resolution, the end user device will continue to request (and Brazzers will provide) streamlets corresponding to the current, chosen resolution.</p>
<p>[1.3] wherein the first bit rate stream, the second bit rate stream, and the third bit rate stream each comprise a group of streamlets encoded at a respective one of the plurality of different bit rates,</p>	<p>Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate.</p> <p>In the instant test, a personal computer accessing the Brazzers Premium Site through a web browser makes a HTTPS GET request to stream-private-ht.project1content.com for the Master Manifest. As shown in the excerpts of the Master Manifest below, the video available is encoded at 5 different bitrates.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>#EXTM3U</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> </div>

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Claim Element	Example Infringement Evidence
	<p>index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p>

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Claim Element	Example Infringement Evidence								
	<div> index-f5-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D </div> <p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token</th></tr> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> <tr> <td>3023543 Bandwidth</td><td>index-f3-v1-a1.m3u8?...</td></tr> </table>	Bandwidth	Token	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
Bandwidth	Token								
915420 Bandwidth	index-f1-v1-a1.m3u8?...								
1654630 Bandwidth	index-f2-v1-a1.m3u8?...								
3023543 Bandwidth	index-f3-v1-a1.m3u8?...								

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Claim Element	Example Infringement Evidence	
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
	<p>Each of the bandwidth streams includes segments that encode the same portion of the video at various qualities. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.</p>	
	Bandwidth	Streamlet
	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,

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Claim Element	Example Infringement Evidence	
		<p>seg-1-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-2-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-3-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-4-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-5-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p>

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p>seg-1-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-2-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-3-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-4-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<p>On information and belief, playlists for the other resolution variants also include these segments, which correspond to the same portion of the video provided on-demand from the Brazzers server(s).</p> <p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site. to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>The video server stores the video wherein “each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets.” The HLS protocol indicates that “[a] Media Playlist contains a list of Media Segments, which, when played sequentially, will play the multimedia presentation.” RFC 8216 at 4; <i>see also</i> RFC 8216 at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation.”).</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number,</p>

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Claim Element	Example Infringement Evidence				
	<p>where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p>				
<p>[1.4] each group of streamlets comprising at least first and second streamlets, each of the streamlets corresponding to a portion of the digital content;</p>	<p>As explained above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate.</p> <p>The Master Playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table border="1"> <thead> <tr> <th>Bandwidth</th><th>Token</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> </tbody> </table>	Bandwidth	Token	915420 Bandwidth	index-f1-v1-a1.m3u8?...
Bandwidth	Token				
915420 Bandwidth	index-f1-v1-a1.m3u8?...				

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Claim Element	Example Infringement Evidence	
	1654630 Bandwidth	index-f2-v1-a1.m3u8?...
	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
	A personal computer accessing the Brazzers Premium Site through a web browser uses HTTPS GET requests to retrieve the segments, or streamlets, of the encoded video specified in the file above.	
	Bandwidth	Streamlet
	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, seg-1-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:4.000, seg-2-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, seg-3-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, seg-4-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, seg-5-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p>

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:3.000,</p> <p>seg-1-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-2-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-3-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-4-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	<p>On information and belief, playlists for the other resolution variants also include these segments, which correspond to the same portion of the video provided on-demand on the media player accessing the Brazzers server(s).</p>	

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Claim Element	Example Infringement Evidence																									
	<p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>For the instant test, a personal computer accessing the Brazzers Premium Site requests and receives the streamlets corresponding to the portion of the video program to be viewed, here, All Dolled Up – Try Me Edition”. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests:</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete																						

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	<p>As shown above, the media player embedded in the web page of the Brazzers Premium Site initially requests the 915420 Bandwidth version of the test video but, upon a determination of the network's ability to support higher resolutions, switches to requesting (and seamlessly providing) the 3023543 Bandwidth version of the test video in subsequent streamlets.</p>
<p>[1.5] wherein at least one of the first bit rate stream, the second bit rate stream, and the third bit rate stream is encoded at a bit rate of no less than 600 kbps; and</p>	<p>At least one of the low, medium, and high-quality streams of the provided video is encoded at a bit rate of no less than 600 kbps.</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260
<p>[1.6] wherein the first streamlet of each of the groups has the same first duration and encodes the same first temporal portion of the digital content in each of the first bit rate stream, the second bit rate stream, and the</p>	<p>For the Brazzers video, the streamlet encoding the same portion of the video in the low quality stream has an equal playback duration as the streamlet encoding the same portion of the video in the high quality stream.</p> <p>Each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to streamlet encoding the same portion of the video in the high quality stream; allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. Further, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the embedded media player to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p>

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third bit rate stream, and	<p>As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the personal computer accessing the Brazzers Premium Site through a web browser uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The video files are hosted at stream-private-ht.project1content.com, and each streamlet (except the first and final streamlets) is 4.000 seconds long.</p> <p>The received playlists at each resolution includes video streamlets, such as: “seg-1-f[X]-v1-a1.ts,” “seg-2-f[X]-v1-a1.ts,” “seg-3-f[X]-v1-a1.ts,” “seg-4-f[X]-v1-a1.ts,” and “seg-5-f[X]-v1-a1.ts,” where [X] corresponds to a unique identifier for each bandwidth version. Within each bandwidth playlist file, there are the 559 .ts files, each corresponding to the same segmented moments in the video.</p> <table> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (same portion of live stream)</th></tr> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-a1.ts</u>?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, </td></tr> </table>	Bandwidth Version	File line (#EXTINF: length) (same portion of live stream)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-a1.ts</u> ?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,
Bandwidth Version	File line (#EXTINF: length) (same portion of live stream)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-a1.ts</u> ?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,				

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Claim Element	Example Infringement Evidence
	<p><u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-557-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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		<p>#EXTINF:4.000, <u>seg-558-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616, <u>seg-559-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000, <u>seg-1-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-2-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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		<p>#EXTINF:4.000,</p> <p><u>seg-3-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-557-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <div> <u>seg-558-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:0.616, <u>seg-559-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXT-X-ENDLIST </div> </div> <p>On information and belief, the other bandwidth file playlists also comprise 559 streamlets, each corresponding to the same portion of video as is respective counterpart in the streamlet files shown above.</p> <p>As provided above, HLS requires that “[m]atching content in Variant Streams MUST have matching timestamps” to allow Brazzers to synchronize the media. RFC 8216 at 43; <i>see also</i> RFC 8216 at 43 (“Matching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.”).</p> <p>The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are “in relation to the beginning of the video.” For example, HLS requires that “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6; <i>see also</i> RFC 8216 at 45 (“A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments.”).</p> <p>Indeed, to adapt playback between different bitrate Variant Streams, the media player embedded in the web page of the Brazzers Premium Site “can use the EXTINF durations and the constraints in Section 6.2.4 to determine</p>

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Claim Element	Example Infringement Evidence				
	<p>the approximate location of corresponding media. Once media from the new Variant Stream has been loaded, the timestamps in the Media Segments can be used to synchronize the old and new timelines precisely.” RFC 8216 at 47.</p>				
<p>[1.7] wherein the first streamlet of the first bit rate stream encodes the same first temporal portion of the digital content at a different bit rate than the first streamlet of the second bit rate stream and the first streamlet of the third bit rate stream.</p>	<p>As explained above, each streamlet encoding the same portion of the video in the low quality stream has an equal playback duration as the streamlet encoding the same portion of the video in the high quality stream.</p> <p>Each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to streamlet encoding the same portion of the video in the high quality stream; allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. Further, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow Brazzers to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the personal computer accessing the Brazzers Premium Site through a web browser uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The first streamlet of each of the variant playlists used to stream the video titled “All Dolled Up—Try Me” are the same duration (3.000 seconds) and encode the same portion of the video. The video streamlet files are hosted at stream-private-ht.project1content.com. This is illustrated below:</p> <table border="1"> <thead> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (same portion of live stream)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td>#EXTM3U #EXT-X-TARGETDURATION:4</td></tr> </tbody> </table>	Bandwidth Version	File line (#EXTINF: length) (same portion of live stream)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4
Bandwidth Version	File line (#EXTINF: length) (same portion of live stream)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4				

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

U.S. Patent No. 11,677,798 to Brazzers

Claim Element	Example Infringement Evidence	
		<p>seg-5-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>[***]</p> <p>#EXTINF:4.000,</p> <p>seg-556-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-557-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-558-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p>seg-559-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p>

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <p>seg-5-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <div>[***]</div> <div> <p>#EXTINF:4.000,</p> </div> <div> <p>seg-556-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <div> <p>#EXTINF:4.000,</p> </div> <div> <p>seg-557-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <div> <p>#EXTINF:4.000,</p> </div> <div> <p>seg-558-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <div> <p>#EXTINF:0.616,</p> </div> <div> <p>seg-559-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <div> <p>#EXT-X-ENDLIST</p> </div> <div> <p>On information and belief, playlists for the other resolution variants also include these segments, which correspond to the same portion of the video provided on-demand from Brazzers's server(s).</p> </div>

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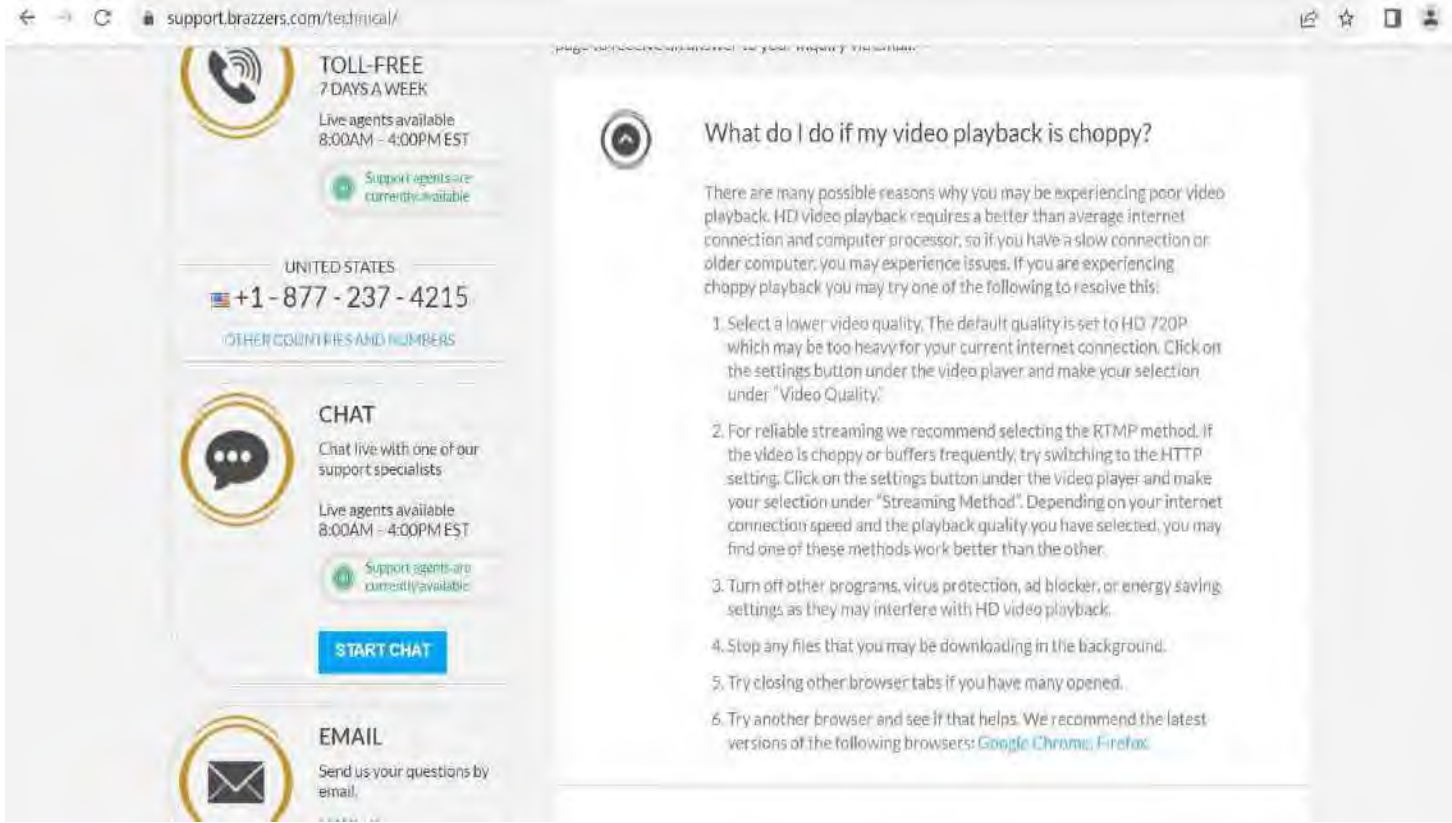
EXHIBIT YY

U.S. Patent No. 9,407,564 to Brazzers

The following claim chart shows exemplary aspects of certain streaming services and products provided by MG Premium Ltd or any other Defendants, using the Brazzers premium website, available at www.brazzers.com (“Brazzers Premium Site”), that infringe claims 1, 3-5, and 8 of the ’564 Patent. The chart is exemplary and should not be read to limit DISH’s assertions against MG Premium Ltd, Brazzers, or any other streaming services offered by MG Premium Ltd or other Defendants as to the services or products described below. The chart should not be read to limit DISH’s assertions to the patent claim charted below. Nor should the chart below be read to limit how MG Premium Ltd and/or other Defendants infringes the claim below.

Claim Element	Example Infringement Evidence
[1.pre] An end user station for adaptive-rate content streaming of digital content from a video server over a network, the end user station comprising:	<p>The Brazzers Premium Site provides information that permits an end user device to stream a video over a network from a server for playback of the video. The streams include live streams that are obtained from one or more servers affiliated with the Brazzers Premium Site over a network.</p> <p>The images in this chart are from the Brazzers Premium Site through a web browser, such as Microsoft Edge, Google Chrome, or iOS Safari. In addition, the media player embedded in the web page of, and executed based upon instructions given by, the Brazzers Premium Site is available to run on content player devices supporting all the latest versions of major web browsers. <i>See</i> https://www.support.brazzers.com/technical/ (“[Brazzers] support[s] all the latest versions of major web browsers....”). <i>See also id.</i> (showing, in part, that an internet connection is required in order to stream videos):</p>

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Claim Element	Example Infringement Evidence
	 <p>The screenshot shows the support.brazzers.com/technical/ website. On the left, there are three contact options: TOLL-FREE (7 DAYS A WEEK, 8:00AM - 4:00PM EST), CHAT (Live agents available 8:00AM - 4:00PM EST), and EMAIL (Send us your questions by email). On the right, there is an article titled "What do I do if my video playback is choppy?" with a list of six troubleshooting steps.</p> <p>https://www.support.brazzers.com/technical/</p> <p>Tests were conducted on videos offered over the Brazzers website executed on a personal computer. As part of the testing, a personal computer accessing the Brazzers Premium Site was connected to the internet through the Charles Proxy application, which enabled the ability to proxy the device's network traffic, to view the device's network traffic, and to throttle the network's available bandwidth. Thus, the test simulated how Brazzers responded to lower and higher bandwidths. For the current test, a video titled "All Dolled Up – Try Me" was selected, and at various times throughout the playback of the video, bandwidth was restricted to download</p>

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Claim Element	Example Infringement Evidence
	<p>speeds of 2048 kbps. As observed through the tests, when the user selects a video from the available videos, the media player embedded in the web page of the Brazzers Premium Site displays more details regarding the video and provides the user with the option to view the video.</p> <p>Selecting the icon corresponding to a video causes that video and other materials to be streamed and displayed on the user's device.</p> <p>With respect to adaptively receiving the digital stream from the video server over the network, the Brazzers Premium Site's adaptive bitrate streams are provided to the media player embedded in the web page of the Brazzers Premium Site from a server over a network using the HTTP Live Streaming ("HLS") adaptive bitrate streaming protocol. HLS is "a protocol for transferring unbounded streams of multimedia data." Request For Comments: 8216 – HTTP Live Streaming, August 2017 ("RFC 8216") at 1. Using HLS, "a client can receive a continuous stream of media from a server for concurrent presentation." RFC 8216 at 4. HLS "allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality." RFC 8216 at 4. With HLS, "[c]lients should switch between different Variant Streams to adapt to network conditions." RFC 8216 at 5.</p> <p>As explained in further detail below, Brazzers provides an end user station for adaptive-rate content streaming of digital content from a video server over a network, the end user station.</p>
<p>[1.1] a media player operating on the end user station configured to stream a video from the video server via at least one transmission control protocol (TCP) connection over the network,</p>	<p>The end user station accesses streams of video programs that are stored on one or more servers over a network and displayed to end user devices via the media player embedded in the web page of the Brazzers Premium Site. These video programs are accessible via the Internet using HLS, which necessarily uses HTTP GET requests. HTTP GET requests, in turn, require TCP connections.</p> <p>Accessible by the end user station via the network connection, one or more servers store streamlets corresponding to particular segments of a Brazzers video program, and each streamlet is encoded at one of numerous resolutions. The one or more servers stores media playlists, or variant playlists, further illustrating a plurality of streams of the video program. Each of the stored playlists comprises a plurality of streamlets at the same resolution, and the organization of each variant playlist helps to ensure the sequential playback of the streams at a resolution supported by the available network bandwidth.</p>

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Claim Element	Example Infringement Evidence				
	<p>The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. <i>See</i> RFC 8216 at 38 (“The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played.”); <i>see also</i> RFC 8216 at 4 (“A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.”).</p> <p>As shown by the Charles Proxy application file, partially reproduced below, the streamlet video files are hosted on a server and available at stream-private-ht.project1content.com.</p>				
	Method	Host	Path ¹	...	Status
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-70-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-71-f3-v1-a1.ts?...	...	Complete

¹ Video path abbreviated for readability throughout.

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Claim Element	Example Infringement Evidence					
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-72-f3-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-73-f3-v1-a1.ts?...	...	Complete	
[1.2] wherein multiple different copies of the video encoded at different bit rates are stored on the video server as multiple sets of files,	<p>The one or more servers, accessible by the media player embedded in the web page of the Brazzers Premium Site, store multiple different copies of the video encoded at different bit rates, and are stored on the video server as multiple sets of files.</p> <p>The numerous streams of the video program accessible by the media player embedded in the web page of the Brazzers Premium Site include a low quality stream, a medium quality stream, and a high quality stream.</p> <p>For example, in the instant test of a video titled “All Dolled Up—Try Me,” the end user station accessing the Brazzers Premium Site made an HTTP GET request to stream-private-ht.project1content.com for a master manifest located at the following path: /hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/master.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D (hereafter referred to as the “Master Manifest” or “master.m3u8”). The Master Manifest returned the following contents:</p> <div>#EXTM3U</div>					

U.S. Patent No. 9,407,564 to Brazzers

Claim Element	Example Infringement Evidence
	<p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p> <p>index-f5-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>File path: master.m3u8</p>

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Claim Element	Example Infringement Evidence										
	<p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each variant playlist, or version playlist, is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token²</th></tr> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> <tr> <td>3023543 Bandwidth</td><td>index-f3-v1-a1.m3u8?...</td></tr> <tr> <td>4816531 Bandwidth</td><td>index-f4-v1-a1.m3u8?...</td></tr> </table>	Bandwidth	Token ²	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...	3023543 Bandwidth	index-f3-v1-a1.m3u8?...	4816531 Bandwidth	index-f4-v1-a1.m3u8?...
Bandwidth	Token ²										
915420 Bandwidth	index-f1-v1-a1.m3u8?...										
1654630 Bandwidth	index-f2-v1-a1.m3u8?...										
3023543 Bandwidth	index-f3-v1-a1.m3u8?...										
4816531 Bandwidth	index-f4-v1-a1.m3u8?...										

² Token abbreviated for readability. The abbreviated portions of each token are the same across all bandwidth versions.

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Claim Element	Example Infringement Evidence	
	6660563 Bandwidth	<p>index-f5-v1-a1.m3u8?...</p> <p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>The end user station accessing Brazzers Premium Site uses HTTPS GET requests to retrieve the segments, or streamlets, of the encoded video specified in the file above from the one or more servers hosting Brazzers content.</p> <p>The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. <i>See</i> RFC 8216 at 38 (“The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played.”); <i>see also</i> RFC 8216 at 4 (“A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.”).</p> <p>As shown in the test data, Brazzers selects the 3023543 Bandwidth version of the stream and makes a request for the corresponding playlist. Brazzers’s Server(s) returns the playlist file with the following contents:</p> <div> <pre>#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3</pre> </div>

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Claim Element	Example Infringement Evidence
	<pre> #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, seg-1-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-2-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-3-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-4-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D [***] #EXTINF:4.000, </pre>

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Claim Element	Example Infringement Evidence
	<div style="border: 1px solid black; padding: 10px;"> <p>seg-556-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-557-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-558-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p>seg-559-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p> </div> <p>On information and belief, the other bandwidth versions of the test video contain the same number of streamlet files.</p>
[1.3] wherein each of the files yields a different portion of the video on playback,	As described above, the one or more servers, accessible by the media player embedded in the web page of the Brazzers Premium Site, store multiple different copies of the video encoded at different bit rates, and are stored on the video server as multiple sets of files. Additionally, each of the files yields a different portion of the video on playback.

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Claim Element	Example Infringement Evidence
	<p>In the instant test, an end user station accessing the media player embedded in the web page of the Brazzers Premium Site through a web browser makes a HTTPS GET request to stream-private-ht.project1content.com for the Master Manifest. As shown in the excerpts of the Master Manifest below, the video available is encoded at 5 different bitrates.</p> <div style="border: 1px solid black; padding: 10px;"> <pre>#EXTM3U #EXT-X-STREAM-INF:PROGRAM- ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3 Zs4%3D #EXT-X-STREAM-INF:PROGRAM- ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3 Zs4%3D #EXT-X-STREAM-INF:PROGRAM- ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3 Zs4%3D</pre> </div>

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Claim Element	Example Infringement Evidence
	<div style="border: 1px solid black; padding: 10px;"> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p> <p>index-f5-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p>

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Claim Element	Example Infringement Evidence	
	Bandwidth	Token
	915420 Bandwidth	index-f1-v1-a1.m3u8?...
	1654630 Bandwidth	index-f2-v1-a1.m3u8?...
	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
	<p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.</p>	
	Bandwidth	Streamlet (<u>segment</u>)
	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence	
		<u>seg-5</u> -f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D
	3023543 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u> -f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2</u> -f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3</u> -f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,

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Claim Element	Example Infringement Evidence
	<div> <p><u>seg-4</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <p>On information and belief, playlists for the other resolution variants also include these segments, or streamlets, also arranged in ascending chronological order and corresponding to the same portion of the video provided on-demand from the end user station accessing the Brazzers server(s).</p> <p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>The video server stores the video wherein “each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets.” The HLS protocol indicates that “[a] Media Playlist contains a list of Media Segments, which, when played sequentially, will play the multimedia presentation.” RFC 8216 at 4; <i>see also</i> RFC 8216 at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to</p>

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Claim Element	Example Infringement Evidence
	<p>discover any added segments.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation.”).</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p>
[1.4] wherein the files across the different copies yield the same portions of the video on playback, and	<p>As described above, the one or more servers accessible by the media player embedded in the web page of the Brazzers Premium Site store multiple different copies of the video encoded at different bit rates, are stored on the video server as multiple sets of files, and each of the files yields a different portion of the video on playback. Additionally, the files across the different copies yield the same portions of the video on playback.</p> <p>In the instant test, an end user station accessing the media player embedded in the web page of the Brazzers Premium Site through a web browser makes a HTTPS GET request to stream-private-hl.project1content.com for the Master Manifest. As shown in the excerpts of the Master Manifest below, the video available is encoded at 5 different bitrates.</p> <div style="border: 1px solid black; padding: 5px;">#EXTM3U</div>

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence						
	<div> #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2" index-f5-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D </div> <p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token</th></tr> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> </table>	Bandwidth	Token	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...
Bandwidth	Token						
915420 Bandwidth	index-f1-v1-a1.m3u8?...						
1654630 Bandwidth	index-f2-v1-a1.m3u8?...						

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Claim Element	Example Infringement Evidence				
	3023543 Bandwidth	index-f3-v1-a1.m3u8?...			
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...			
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...			
	<p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.</p> <table><tr><th>Bandwidth</th><th>Streamlet (<u>segment</u>)</th></tr><tr><td>915420 Bandwidth</td><td>#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1</td></tr></table>		Bandwidth	Streamlet (<u>segment</u>)	915420 Bandwidth
Bandwidth	Streamlet (<u>segment</u>)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1				

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p>

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Claim Element	Example Infringement Evidence	
		<p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <div></div> <div> <u>seg-5-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D </div> </div> <p>On information and belief, playlists for the other resolution variants also include these segments, or streamlets, also arranged in ascending chronological order and corresponding to the same portion of the video provided on-demand from the end user station accessing the Brazzers server(s).</p> <p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>The video server stores the video wherein “each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets.” The HLS protocol indicates that “[a] Media Playlist contains a list of Media Segments, which, when played sequentially, will play the multimedia presentation.” RFC 8216 at 4; <i>see also</i> RFC 8216 at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation.”).</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media</p>

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Claim Element	Example Infringement Evidence
	<p>Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p>
[1.5] wherein each of the files comprises a time index such that the files whose playback is the same portion of the video for each of the different copies have the same time index in relation to the beginning of the video, and	<p>As described above, the one or more servers accessible by the media player embedded in the web page of the Brazzers Premium Site store multiple different copies of the video encoded at different bit rates, are stored on the video server as multiple sets of files, each of the files yields a different portion of the video on playback, and the files across the different copies yield the same portions of the video on playback. Additionally, each of the files comprises a time index such that the files whose playback is the same portion of the video for each of the different copies have the same time index in relation to the beginning of the video</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the</p>

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Claim Element	Example Infringement Evidence				
	<p>continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.</p> <table border="1"> <thead> <tr> <th>Bandwidth</th><th>Streamlet (<u>segment</u>)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO 7JKFSmRbzI3Zs4%3D </td></tr> </tbody> </table>	Bandwidth	Streamlet (<u>segment</u>)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u> -f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO 7JKFSmRbzI3Zs4%3D
Bandwidth	Streamlet (<u>segment</u>)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u> -f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO 7JKFSmRbzI3Zs4%3D				

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p>

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	<p>On information and belief, playlists for the other resolution variants also include these segments, or streamlets, also arranged in ascending chronological order and corresponding to the same portion of the video provided on-demand from the end user station accessing the Brazzers server(s).</p>	

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Claim Element	Example Infringement Evidence				
<p>[1.6] wherein the media player streams the video by:</p> <p>requesting a plurality of sequential files of one of the copies from the video server based on the time indexes;</p>	<p>The end user station accessing the Brazzers Premium Site streams the video by requesting a plurality of sequential files of one of the copies from the video server based on the time indexes.</p> <p>Additionally, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow Brazzers to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user station accessing Brazzers Premium Site uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The video files are hosted at stream-private-ht.project1content.com, and each streamlet (except the first and final streamlets) is 4.000 seconds long.</p> <p>The received playlists at each resolution includes video streamlets, such as: “seg-1-f[X]-v1-a1.ts,” “seg-2-f[X]-v1-a1.ts,” “seg-3-f[X]-v1-a1.ts,” “seg-4-f[X]-v1-a1.ts,” and “seg-5-f[X]-v1-a1.ts,” where [X] corresponds to a unique identifier for each bandwidth version. Within each bandwidth playlist file, there are the 559 .ts files, each corresponding to the same segmented moments in the video.</p> <table border="1"> <thead> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (portion of stream)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD </td></tr> </tbody> </table>	Bandwidth Version	File line (#EXTINF: length) (portion of stream)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD
Bandwidth Version	File line (#EXTINF: length) (portion of stream)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD				

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p style="text-align: right;">[***]</p>

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:4.000, <u>seg-556</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-557</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-558</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616, <u>seg-559</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p>

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Claim Element	Example Infringement Evidence
	<p>#EXTINF:3.000,</p> <p><u>seg-1-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: right;">[***]</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <p><u>seg-556-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-557-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-558-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p><u>seg-559-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p> </div> <p>On information and belief, the other bandwidth file playlists also comprise 559 streamlets, each corresponding to the same portion of video as is respective counterpart in the streamlet files shown above.</p> <p>The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are “in relation to the beginning of the video.” For example, HLS requires that “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6; <i>see also</i> RFC 8216 at 45 (“A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the</p>

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Claim Element	Example Infringement Evidence
	<p>presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments.”).</p> <p>Indeed, to adapt playback between different bitrate Variant Streams, the media player embedded in the web page of the Brazzers Premium Site “can use the EXTINF durations and the constraints in Section 6.2.4 to determine the approximate location of corresponding media. Once media from the new Variant Stream has been loaded, the timestamps in the Media Segments can be used to synchronize the old and new timelines precisely.” RFC 8216 at 47.</p>
<p>[1.7] automatically requesting from the video server subsequent portions of the video by requesting for each such portion one of the files from one of the copies dependent upon successive determinations by the end user station to shift the playback quality to a higher or lower quality one of the different copies,</p>	<p>As explained above, the video segments are presented in sequential ascending chronological order, based upon the previously requested and/or fulfilled streamlet, defined by time index relevant to the beginning of the program. The requests are transmitted automatically, without the need for user request for the sequential streamlets. Additionally, subsequent portions of the video are requested for each such portion one of the files from one of the copies dependent upon successive determinations by the end user station to shift the playback quality to a higher or lower quality one of the different copies.</p> <p>Each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to streamlet encoding the same portion of the video in the high quality stream; allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. Further, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow Brazzers to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user station accessing Brazzers Premium Site uses HTTPS GET requests to</p>

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Claim Element	Example Infringement Evidence				
	<p>request and retrieve the segments of the encoded stream specified in the file above. The first streamlet of each of the variant playlists used to stream the video titled “All Dolled Up—Try Me” are the same duration (3.000 seconds) and encode the same portion of the video. The video streamlet files are hosted at stream-private-ht.project1content.com. This is illustrated below:</p> <table border="1"> <thead> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (<u>same portion of stream</u>)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D </td></tr> </tbody> </table>	Bandwidth Version	File line (#EXTINF: length) (<u>same portion of stream</u>)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D
Bandwidth Version	File line (#EXTINF: length) (<u>same portion of stream</u>)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D				

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Claim Element	Example Infringement Evidence
	<p>#EXTINF:4.000,</p> <p><u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-557-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-558-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p>

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Claim Element	Example Infringement Evidence	
		<u>seg-559-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXT-X-ENDLIST
	3023543 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000,

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Claim Element	Example Infringement Evidence
	<p><u>seg-4-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-557-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-558-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p><u>seg-559-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence				
			#EXT-X-ENDLIST		
	HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).				
	For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.				
	Method	Host	Path	...	Status
	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	
GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	
GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete	
The Brazzers’s “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player embedded in the web page of the Brazzers Premium Site, “[t]he client,” which is the end user station accessing Brazzers Premium Site, “SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to					

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Claim Element	Example Infringement Evidence
	<p>load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station accessing the Brazzers Premium Site requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to play back the video program normally, the end user station accessing the Brazzers Premium Site must request a plurality of files with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p> <p>As shown above, although the end user station accessing the Brazzers Premium Site initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted.</p> <p>On information and belief, playlists for the other resolution variants also include these segments, which correspond to the same portion of the video provided on-demand from the end user station accessing the Brazzers server(s).</p>
[1.8] the automatically requesting including repeatedly generating a factor indicative of the current ability to sustain the streaming of the video using the files from different ones of the copies, wherein the set of one or more	<p>As described above, Brazzers automatically requests, via the end user station, from the video server subsequent portions of the video by requesting for each such portion one of the files from one of the copies dependent upon successive determinations by the end user station to shift the playback quality to a higher or lower quality one of the different copies. Additionally, the automatic requesting includes repeatedly generating a factor indicative of the current ability to sustain the streaming of the video using the files from different ones of the copies, wherein the set of one or more factors relate to the performance of the network.</p> <p>Based upon the available network connection, which is repeatedly assessed by the end user station, the end user station accessing the Brazzers Premium Site repeatedly and automatically places requests to the server(s) hosting Brazzers content for one or more subsequent streamlets for a video program shown on the media player embedded in the web page of the Brazzers Premium Site.</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p>

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Claim Element	Example Infringement Evidence																									
factors relate to the performance of the network;	<p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table> <p>According to the HLS protocol, “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player embedded in the web page of the Brazzers Premium Site, “[t]he client,” which is the media player embedded in the web page of the Brazzers Premium Site, “SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station accessing the Brazzers Premium Site requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to playback normally, the end user station accessing the Brazzers Premium Site must request a plurality of files</p>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete																						

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Claim Element	Example Infringement Evidence
	<p>with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p> <p>As shown above, although the end user station accessing the Brazzers Premium Site initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted.</p>
<p>[1.9] making the successive determinations to shift the playback quality based on the factor to achieve continuous playback of the video using the files of the highest quality one of the copies determined sustainable at that time so that the media player upshifts to a higher quality one of the different copies when the factor is greater than a first threshold and downshifts to a lower quality one</p>	<p>As described above, Brazzers automatically requests, via the end user station, from the video server subsequent portions of the video by requesting for each such portion one of the files from one of the copies dependent upon successive determinations by the end user station to shift the playback quality to a higher or lower quality one of the different copies, and the automatic requesting includes repeatedly generating a factor indicative of the current ability to sustain the streaming of the video using the files from different ones of the copies, wherein the set of one or more factors relate to the performance of the network. Additionally, making the successive determinations to shift the playback quality based on the factor to achieve continuous playback of the video using the files of the highest quality one of the copies determined sustainable at that time so that the media player shifts to displaying a higher quality one of the different copies when the factor is greater than a first threshold and shifts to displaying a lower quality one of the different copies when the factor is less than a second threshold.</p> <p>In response to being provided with the first streamlet via a successful HTTP GET request, as shown above, the media player embedded in the web page of the Brazzers Premium Site receives the requested streamlet from the server via the one or more network connections. <i>See e.g.</i>, RFC 8216 at 4 (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”); <i>id.</i> at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”).</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be</p>

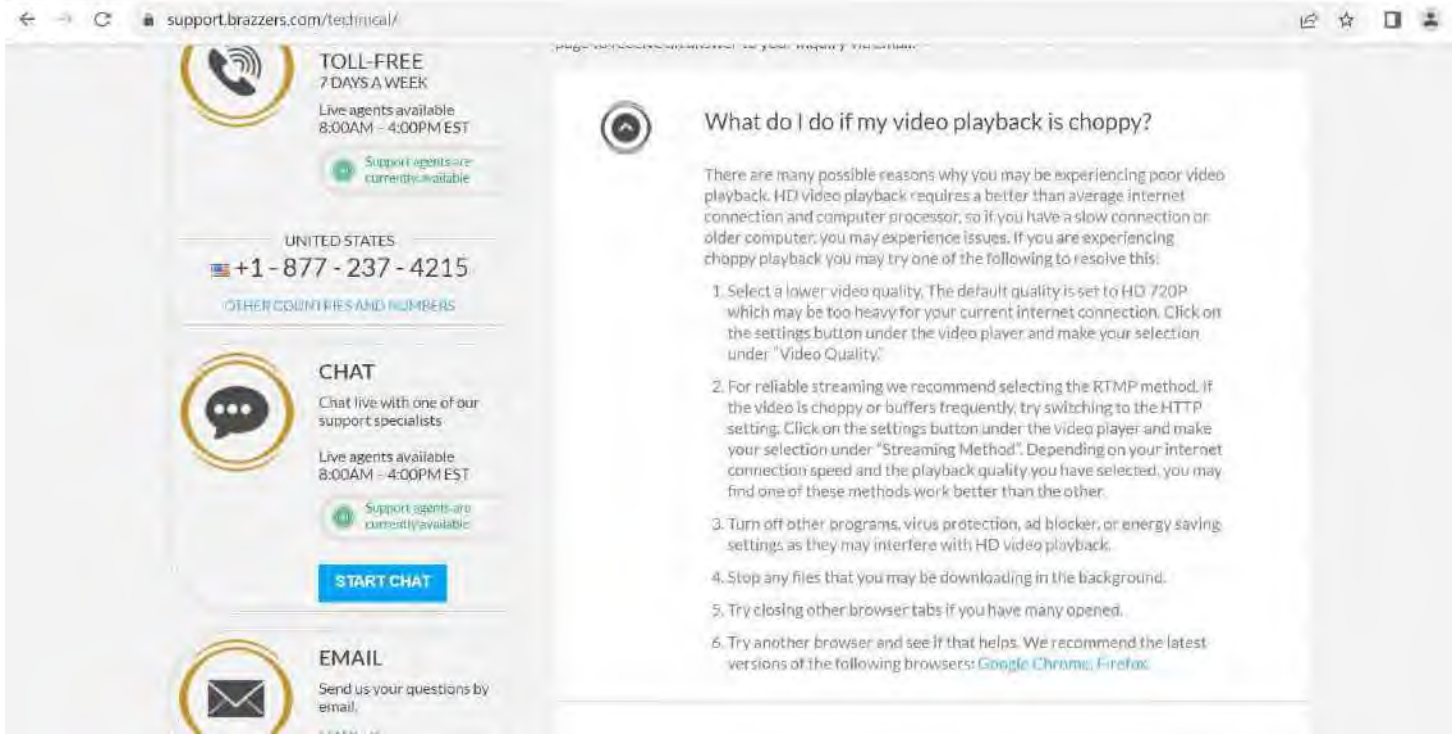
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Claim Element	Example Infringement Evidence				
of the different copies when the factor is less than a second threshold; and	supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.				
	Method	Host	Path	...	Status
	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).					
For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests:					
Method	Host	Path	...	Status	

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Claim Element	Example Infringement Evidence					
	GET	stream-private-ht.project1content.com	.../hls/.../seg-43-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-44-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-45-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-46-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-47-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-48-f3-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-49-f3-v1-a1.ts?...	...	Complete	
[1.10] presenting the video by playing back the requested media files with the media player on the end user station in order of ascending playback time.	<p>The media player embedded in the web page of the Brazzers Premium Site provides the streamlets of the video program to the end user device over a network connection in order of ascending playback time. The media player embedded in the web page of the Brazzers Premium Site presents the video by playing back the requested media files with the media player on the end user station in order of ascending playback time.</p> <p>Brazzers confirms that the media player embedded in its site provides video playback to end user stations over a network connection on the Brazzers support webpage, https://www.support.brazzers.com. There, Brazzers troubleshoots problems end users may have with HLS and instructs users on how to optimize their video playback experience. See https://www.support.brazzers.com/technical.</p>					

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Claim Element	Example Infringement Evidence
	 <p>The screenshot shows the technical support page for Brazzers. It includes a toll-free phone number (+1-877-237-4215), a chat option with a 'START CHAT' button, and an email option. The chat section is highlighted with a blue button.</p>
<p>[3.1] The end user station of claim 1, wherein the media player is configured to generate the factor according to the responses to segment requests.</p>	<p>The end user station accessing the Brazzers Premium Site is configured to generate the factor according to the responses to segment requests.</p> <p>The media player embedded in the web page of the Brazzers Premium Site receives a streamlet upon successful fulfillment of an HTTP GET request for the streamlet by the end user station. The request is communicated via one or more network connections.</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p>

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Claim Element	Example Infringement Evidence																									
	<p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table> <p>The variant “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player embedded in the web page of the Brazzers Premium Site, “[t]he client,” which is the end user station accessing the Brazzers Premium Site, “SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station accessing the Brazzers Premium Site requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to playback normally, the end user station accessing the Brazzers Premium Site must request a plurality of files with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete																						

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Claim Element	Example Infringement Evidence														
	As shown above, although the end user station accessing the Brazzers Premium Site initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted.														
[4.1] The end user station of claim 1, wherein the media player is configured to upshift to the higher quality copy when the factor is greater than the first threshold and the media player determines the higher quality playback can be sustained according to a combination of factors.	<p>The media player embedded in the web page of the Brazzers Premium Site is configured to shift to display the received higher quality copy of the video program when the factor is greater than the first threshold and the end user station accessing the Brazzers Premium Site determines the higher quality playback can be sustained according to a combination of factors, such as network condition, performance, etc.</p> <p>In response to receiving the first streamlet via a successful HTTP GET request, as shown above, the media player embedded in the web page of the Brazzers Premium Site receives the requested streamlet from the server via the one or more network connections and displays said streamlet. <i>See e.g.</i>, RFC 8216 at 4 (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”); <i>id.</i> at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”).</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>					Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status											
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete											

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Claim Element	Example Infringement Evidence										
	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete						
	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete						
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete						
[5.1] The end user station of claim 1 wherein the media player is configured to upshift to the higher quality copy when the performance factor is greater than the first threshold and the media player determines that the higher quality playback can be sustained according to an amount of contiguously available files	<p>The media player embedded in the web page of the Brazzers Premium Site is configured to shift to display the received higher quality copy of the video program when the factor is greater than the first threshold and the end user station accessing the Brazzers Premium Site determines the higher quality playback can be sustained according to a combination of factors, such as network condition, performance, etc.</p> <p>In response to receiving the first streamlet via a successful HTTP GET request, as shown above, the media player embedded in the web page of the Brazzers Premium Site receives the requested streamlet from the server via the one or more network connections and displays said streamlet. <i>See e.g.</i>, RFC 8216 at 4 (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”); <i>id.</i> at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”).</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr></table>						Method	Host	Path	...	Status
Method	Host	Path	...	Status							

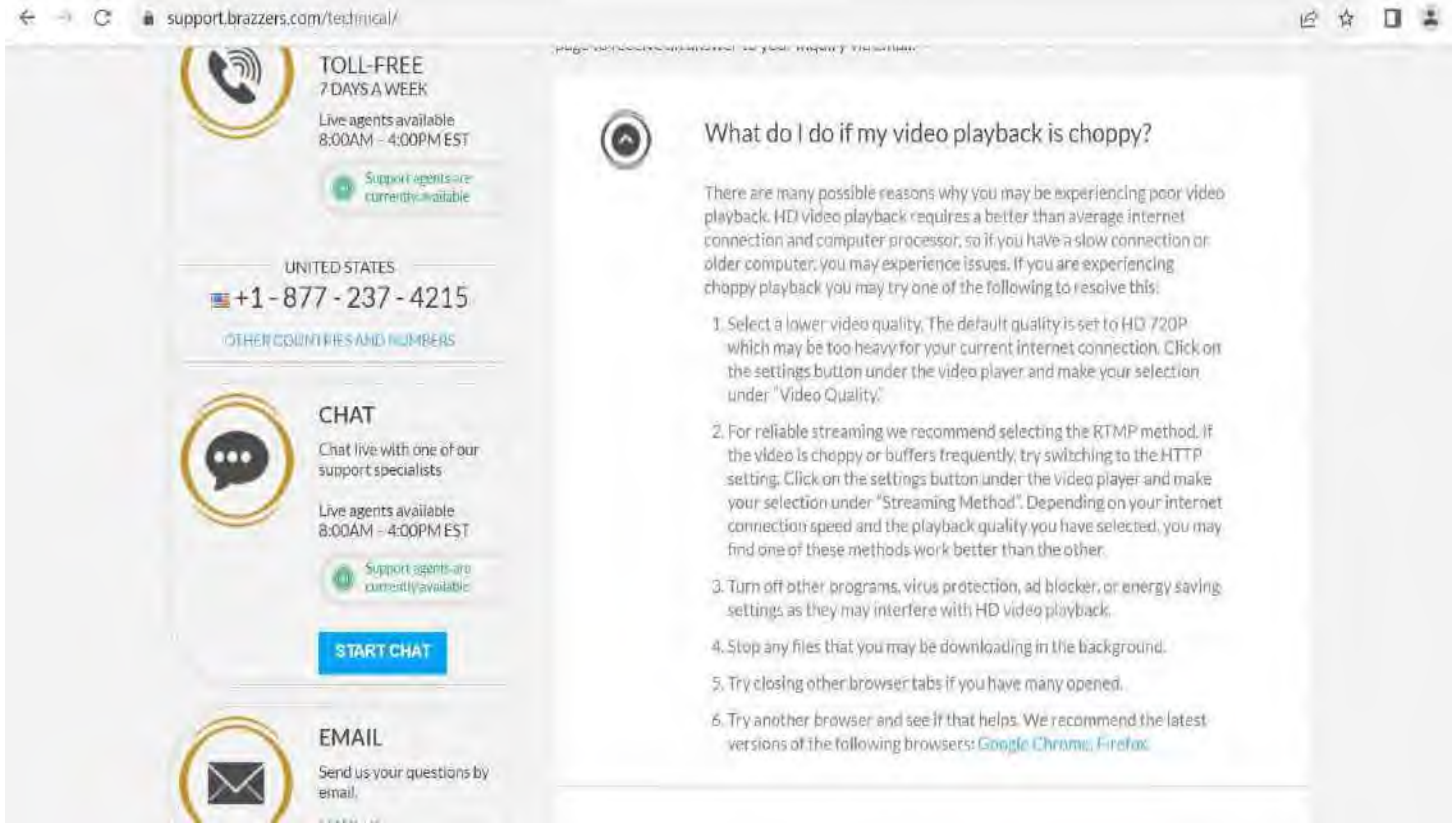
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Claim Element	Example Infringement Evidence									
stored by the media player.	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete					
	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete					
	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete					
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete					
<p>In response to receiving the first streamlet via a successful HTTP GET request, as shown above, the media player embedded in the web page of the Brazzers Premium Site receives the requested streamlet from the server via the one or more network connections and displays said streamlet. <i>See e.g.</i>, RFC 8216 at 4 (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”); <i>id.</i> at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”).</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests:</p>										
<table><tr><td>Method</td><td>Host</td><td>Path</td><td>...</td><td>Status</td></tr></table>						Method	Host	Path	...	Status
Method	Host	Path	...	Status						

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Claim Element	Example Infringement Evidence					
	GET	stream-private-ht.project1content.com	.../hls/.../seg-43-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-44-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-45-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-46-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-47-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-48-f3-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-49-f3-v1-a1.ts?...	...	Complete	
[8.pre] A method executable by an end user station to present rate-adaptive streams received via at least one transmission control protocol (TCP) connection with a server over	<p>The Brazzers Premium Site provides information that permits an end user device to stream a video over a network from a server for playback of the video. The streams of the videos are obtained from one or more video servers connecting to Brazzers over a network using at least one transmission control protocol (“TCP”).</p> <p>The images in this chart are from the Brazzers website accessed through a web browser, such as Microsoft Edge or Google Chrome. In addition, the media player embedded in the web page of the Brazzers Premium Site is available to run on content player devices supporting all the latest versions of major web browsers. <i>See</i> https://www.support.brazzers.com/technical/ (“[Brazzers] support[s] all the latest versions of major web browsers....”). <i>See also id.</i> (shown below):</p>					

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a network, the method comprising:	 <p>The screenshot shows the support.brazzers.com/technical/ website. On the left, there are three contact options: TOLL-FREE (7 DAYS A WEEK, Live agents available 8:00AM - 4:00PM EST), CHAT (Chat live with one of our support specialists, Live agents available 8:00AM - 4:00PM EST), and EMAIL (Send us your questions by email). On the right, there is a section titled 'What do I do if my video playback is choppy?' with a list of six troubleshooting steps: 1. Select a lower video quality, 2. For reliable streaming we recommend selecting the RTMP method, 3. Turn off other programs, virus protection, ad blocker, or energy saving settings, 4. Stop any files that you may be downloading in the background, 5. Try closing other browser tabs if you have many opened, and 6. Try another browser and see if that helps.</p> <p>https://www.support.brazzers.com/technical/</p> <p>Tests were conducted on videos offered over the Brazzers Premium Site operating on a personal computer. As part of the testing, the end user station accessing the Brazzers Premium Site was connected to the internet through the Charles Proxy application, which enabled the ability to throttle the network's available bandwidth. Thus, the test simulated how Brazzers responded to lower and higher bandwidths. For the current test, a video titled "All Dolled Up – Try Me" was selected. When the user selects a video from the available videos, the</p>

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Claim Element	Example Infringement Evidence
	<p>media player embedded in the web page of the Brazzers Premium Site displays more details regarding the video and provides the user with the option to view the video.</p> <p>Selecting the icon corresponding to a video causes that video and other materials to be streamed and displayed on the user's device.</p> <p>With respect to adaptively receiving the digital stream from the video server over the network, the Brazzers Premium Site's adaptive bitrate streams are provided to the media player embedded in the web page of the Brazzers Premium Site from a server over a network using the HTTP Live Streaming ("HLS") adaptive bitrate streaming protocol. HLS is "a protocol for transferring unbounded streams of multimedia data." Request For Comments: 8216 – HTTP Live Streaming, August 2017 ("RFC 8216") at 1. Using HLS, "a client can receive a continuous stream of media from a server for concurrent presentation." RFC 8216 at 4. HLS "allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality." RFC 8216 at 4. With HLS, "[c]lients should switch between different Variant Streams to adapt to network conditions." RFC 8216 at 5.</p> <p>As explained in further detail below, Brazzers performs a method executable by an end user station that presents rate-adaptive streams received from at least one server over an internet network connection.</p>
[8.1] streaming, by a media player operating on an end user station, a video from the server via the at least one TCP connection over the network,	<p>The end user station accesses streams of video programs that are stored on one or more servers over a network and displayed to end user devices via the media player embedded in the web page of the Brazzers Premium Site. These video programs are accessed via the Internet using HLS, which necessarily uses HTTP GET requests. HTTP GET requests, in turn, require TCP connections.</p> <p>The one or more servers accessible by Brazzers store streamlets corresponding to particular segments of a video program, and each streamlet is encoded at one of numerous resolutions.</p> <p>The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. <i>See</i> RFC 8216 at 38 ("The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played."); <i>see also</i> RFC 8216 at 4 ("A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist."); RFC 8216 at 4 ("A</p>

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Claim Element	Example Infringement Evidence				
	Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.”).				
	As shown by the Charles Proxy application file, partially reproduced below, the streamlet video files are hosted on a server and available at stream-private-ht.project1content.com.				
	Method	Host	Path ³	...	Status
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-70-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-71-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-72-f3-v1-a1.ts?...	...	Complete

³ Video path abbreviated for readability throughout.

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Claim Element	Example Infringement Evidence					
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-73-f3-v1-a1.ts?...	...	Complete	
[8.2] wherein multiple different copies of the video encoded at different bit rates are stored as multiple sets of files on the server,	<p>The one or more servers accessible by the end user station accessing the Brazzers Premium Site store streamlets corresponding to particular segments of a video program, and each streamlet is encoded at one of numerous resolutions.</p> <p>The numerous streams of the video program accessible by the end user station accessing the Brazzers Premium Site include a low quality stream, a medium quality stream, and a high quality stream.</p> <p>For example, in the instant test of a video titled “All Dolled Up—Try Me,” the end user station accessing the Brazzers Premium Site made an HTTP GET request to stream-private-ht.project1content.com for a master manifest located at the following path: /hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/master.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D (hereafter referred to as the “Master Manifest” or “master.m3u8”). The Master Manifest returned the following contents:</p> <div> <pre>#EXTM3U #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f1-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</pre> </div>					

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Claim Element	Example Infringement Evidence
	<p>index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p> <p>index-f5-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260

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Claim Element	Example Infringement Evidence												
	<p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token⁴</th></tr> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> <tr> <td>3023543 Bandwidth</td><td>index-f3-v1-a1.m3u8?...</td></tr> <tr> <td>4816531 Bandwidth</td><td>index-f4-v1-a1.m3u8?...</td></tr> <tr> <td>6660563 Bandwidth</td><td>index-f5-v1-a1.m3u8?...</td></tr> </table> <p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p>	Bandwidth	Token ⁴	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...	3023543 Bandwidth	index-f3-v1-a1.m3u8?...	4816531 Bandwidth	index-f4-v1-a1.m3u8?...	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
Bandwidth	Token ⁴												
915420 Bandwidth	index-f1-v1-a1.m3u8?...												
1654630 Bandwidth	index-f2-v1-a1.m3u8?...												
3023543 Bandwidth	index-f3-v1-a1.m3u8?...												
4816531 Bandwidth	index-f4-v1-a1.m3u8?...												
6660563 Bandwidth	index-f5-v1-a1.m3u8?...												

⁴ Token abbreviated for readability. The abbreviated portions of each token are the same across all bandwidth versions.

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Claim Element	Example Infringement Evidence
	<p>The end user station accessing Brazzers Premium Site uses HTTPS GET requests to retrieve the segments, or streamlets, of the encoded video specified in the file above.</p> <p>The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. <i>See</i> RFC 8216 at 38 (“The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played.”); <i>see also</i> RFC 8216 at 4 (“A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.”).</p> <p>As shown in the test data, Brazzers selects the 3023543 Bandwidth version of the stream and makes a request for the corresponding playlist. Brazzers’s server(s) returns the playlist file with the following contents:</p> <div style="border: 1px solid black; padding: 10px;"> <pre>#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, seg-1-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4 %3D #EXTINF:4.000,</pre> </div>

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Claim Element	Example Infringement Evidence
	<p>seg-2-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-3-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-4-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p>seg-556-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-557-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<div style="border: 1px solid black; padding: 5px;"> #EXTINF:4.000, seg-558-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:0.616, seg-559-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-ENDLIST </div> <p>On information and belief, the other bandwidth versions of the test video contain the same number of streamlet files.</p>
[8.3] wherein each of the files yields a different portion of the video on playback,	<p>As mentioned above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate.</p> <p>In the instant test, an end user station accessing the Brazzers Premium Site through a web browser makes a HTTPS GET request to stream-private-ht.project1content.com for the Master Manifest. As shown in the excerpts of the Master Manifest below, the video available is encoded at 5 different bitrates.</p> <div style="border: 1px solid black; padding: 5px;"> #EXTM3U #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" </div>

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Claim Element	Example Infringement Evidence
	<p>index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p>

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Claim Element	Example Infringement Evidence								
	<div style="border: 1px solid black; padding: 5px;"> index-f5-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D </div> <p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token</th></tr> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> <tr> <td>3023543 Bandwidth</td><td>index-f3-v1-a1.m3u8?...</td></tr> </table>	Bandwidth	Token	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
Bandwidth	Token								
915420 Bandwidth	index-f1-v1-a1.m3u8?...								
1654630 Bandwidth	index-f2-v1-a1.m3u8?...								
3023543 Bandwidth	index-f3-v1-a1.m3u8?...								

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Claim Element	Example Infringement Evidence				
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...			
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...			
	<p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.</p> <table><tr><th>Bandwidth</th><th>Streamlet (<u>segment</u>)</th></tr><tr><td>915420 Bandwidth</td><td>#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,</td></tr></table>		Bandwidth	Streamlet (<u>segment</u>)	915420 Bandwidth
Bandwidth	Streamlet (<u>segment</u>)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,				

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Claim Element	Example Infringement Evidence	
		<p><u>seg-1</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-2</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-3</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-5</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p>

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<p>On information and belief, playlists for the other resolution variants also include these segments, or streamlets, also arranged in ascending chronological order and corresponding to the same portion of the video provided on-demand from the end user station accessing the Brazzers server(s).</p> <p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>The video server stores the video, wherein “each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets.” The HLS protocol indicates that “[a] Media Playlist contains a list of Media Segments, which, when played sequentially, will play the multimedia presentation.” RFC 8216 at 4; <i>see also</i> RFC 8216 at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation.”).</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the</p>

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Claim Element	Example Infringement Evidence				
	<p>continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p>				
<p>[8.4] wherein the files across the different copies yield the same portions of the video on playback, and</p>	<p>As explained above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate.</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table border="1"> <thead> <tr> <th>Bandwidth</th><th>Token</th></tr> </thead> <tbody> <tr> <td> </td><td> </td></tr> </tbody> </table>	Bandwidth	Token		
Bandwidth	Token				

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Claim Element	Example Infringement Evidence	
	915420 Bandwidth	index-f1-v1-a1.m3u8?...
	1654630 Bandwidth	index-f2-v1-a1.m3u8?...
	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
<p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.</p>		
Bandwidth		Streamlet (<u>segment</u>)
915420 Bandwidth		#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence	
		<u>seg-5</u> -f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D
	3023543 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u> -f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2</u> -f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3</u> -f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,

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Claim Element	Example Infringement Evidence
	<div> <p><u>seg-4</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <p>On information and belief, playlists for the other resolution variants also include these segments, or streamlets, also arranged in ascending chronological order and corresponding to the same portion of the video provided on-demand from the end user station accessing the Brazzers server(s).</p> <p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>The video server stores the video, wherein “each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets.” The HLS protocol indicates that “[a] Media Playlist contains a list of Media Segments, which, when played sequentially, will play the multimedia presentation.” RFC 8216 at 4; <i>see also</i> RFC 8216 at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to</p>

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Claim Element	Example Infringement Evidence															
	<p>discover any added segments.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation.”).</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p> <p>For the instant test, the media player embedded in the web page of the Brazzers Premium Site requests and receives the streamlets corresponding to the portion of the video program to be viewed, here, All Dolled Up – Try Me Edition”. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests:</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status												
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete												
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete												

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Claim Element	Example Infringement Evidence					
	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete	
[8.5] wherein each of the files comprises a time index such that the files whose playback is the same portion of the video for each of the different copies have the same time index in relation to the beginning of the video, and	<p>As explained above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p>					

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Claim Element	Example Infringement Evidence	
	As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.	
	Bandwidth	Streamlet (<u>segment</u>)
	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u> -f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2</u> -f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,

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Claim Element	Example Infringement Evidence	
		<p><u>seg-3</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-5</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	3023543 Bandwidth	<p>#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,</p> <p><u>seg-1</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <p><u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-5</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <p>On information and belief, playlists for the other resolution variants also include these segments, or streamlets, also arranged in ascending chronological order and corresponding to the same portion of the video provided on-demand from the end user station accessing the Brazzers server(s).</p>
[8.6] wherein the streaming comprises: requesting by the media player a plurality of	<p>As explained above, the end user station accessing the Brazzers Premium Site requests segments, or streamlets from the one or more Brazzers servers to display on an end user device. The video segments are presented in sequential ascending chronological order, based upon the previously requested and/or fulfilled streamlet, defined by time index relevant to the beginning of the program.</p> <p>Additionally, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow Brazzers to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has</p>

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Claim Element	Example Infringement Evidence				
sequential files of one of the copies from the server based on the time indexes;	<p>an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user station accessing Brazzers Premium Site uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The video files are hosted at stream-private-ht.project1content.com, and each streamlet (except the first and final streamlets) is 4.000 seconds long.</p> <p>The received playlists at each resolution includes video streamlets, such as: “seg-1-f[X]-v1-a1.ts,” “seg-2-f[X]-v1-a1.ts,” “seg-3-f[X]-v1-a1.ts,” “seg-4-f[X]-v1-a1.ts,” and “seg-5-f[X]-v1-a1.ts,” where [X] corresponds to a unique identifier for each bandwidth version. Within each bandwidth playlist file, there are the 559 .ts files, each corresponding to the same segmented moments in the video.</p> <table> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (portion of stream)</th></tr> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, </td></tr> </table>	Bandwidth Version	File line (#EXTINF: length) (portion of stream)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,
Bandwidth Version	File line (#EXTINF: length) (portion of stream)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,				

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Claim Element	Example Infringement Evidence
	<p><u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: right;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:4.000, <u>seg-557</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-558</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616, <u>seg-559</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000, <u>seg-1</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p style="text-align: right;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <p><u>seg-557-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</u></p> <p>#EXTINF:4.000,</p> <p><u>seg-558-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</u></p> <p>#EXTINF:0.616,</p> <p><u>seg-559-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</u></p> <p>#EXT-X-ENDLIST</p> </div> <p>On information and belief, the other bandwidth file playlists also comprise 559 streamlets, each corresponding to the same portion of video as is respective counterpart in the streamlet files shown above.</p> <p>The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are “in relation to the beginning of the video.” For example, HLS requires that “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6; <i>see also</i> RFC 8216 at 45 (“A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments.”).</p>

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Claim Element	Example Infringement Evidence		
	<p>Indeed, to adapt playback between different bitrate Variant Streams, the end user station accessing the Brazzers Premium Site “can use the EXTINF durations and the constraints in Section 6.2.4 to determine the approximate location of corresponding media. Once media from the new Variant Stream has been loaded, the timestamps in the Media Segments can be used to synchronize the old and new timelines precisely.” RFC 8216 at 47.</p>		
[8.7] automatically requesting by the media player from the server subsequent portions of the video by requesting for each such portion one of the files from one of the copies dependent upon successive determinations by the end user station to shift the playback quality to a higher or lower quality one of different copies,	<p>As explained above, the video segments are presented in sequential ascending chronological order, based upon the previously requested and/or fulfilled streamlet, defined by time index relevant to the beginning of the program. The requests are transmitted automatically, without the need for user request for the sequential streamlets.</p> <p>Each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to streamlet encoding the same portion of the video in the high quality stream; allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. Further, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user station accessing Brazzers Premium Site uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The first streamlet of each of the variant playlists used to stream the video titled “All Dolled Up—Try Me” are the same duration (3.000 seconds) and encode the same portion of the video. The video streamlet files are hosted at stream-private-ht.project1content.com. This is illustrated below:</p>		
	Bandwidth Version	File line (#EXTINF: length) (same portion of stream)	

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Claim Element	Example Infringement Evidence	
	915420 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence	
		<p>seg-5-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>[***]</p> <p>#EXTINF:4.000,</p> <p>seg-556-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-557-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-558-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p>seg-559-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p>

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <p>seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> </div> <div>[***]</div> <div>#EXTINF:4.000,</div> <div> <p>seg-556-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> </div> <div>#EXTINF:4.000,</div> <div> <p>seg-557-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> </div> <div>#EXTINF:4.000,</div> <div> <p>seg-558-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> </div> <div>#EXTINF:0.616,</div> <div> <p>seg-559-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> </div> <div>#EXT-X-ENDLIST</div>

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Claim Element	Example Infringement Evidence																									
	<p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table> <p>The variant “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player embedded in the web page of the Brazzers Premium Site, “[t]he client,” which is the end user station accessing the Brazzers Premium Site, “SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station accessing the Brazzers Premium Site requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence</p>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete																						

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Claim Element	Example Infringement Evidence										
	<p>Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to playback normally, the end user station accessing the Brazzers Premium Site must request a plurality of files with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p> <p>As shown above, although the end user station accessing the Brazzers Premium Site initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted.</p> <p>On information and belief, playlists for the other resolution variants also include these segments, which correspond to the same portion of the video provided on-demand from the end user station accessing the Brazzers server(s).</p>										
[8.8] the automatically requesting including repeatedly generating a factor indicative of the current ability to sustain the streaming of the video using the files from different ones of the copies, wherein the factor relates to the performance of the network; and	<p>The media player embedded in the web page of the Brazzers Premium Site receives a streamlet following a fulfilled request by the end user station and subsequently displays the received streamlet. The streamlet is communicated over the one or more network connections for the selected stream.</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status							
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete							

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Claim Element	Example Infringement Evidence				
	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
	<p>The variant “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player embedded in the web page of the Brazzers Premium Site, “[t]he client,” which is the end user station accessing the Brazzers Premium Site, “SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station accessing the Brazzers Premium Site requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to playback normally, the end user station accessing the Brazzers Premium Site must request a plurality of files with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p> <p>As shown above, although the end user station accessing the Brazzers Premium Site initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted.</p>				
[8.9] making the successive determinations to shift the playback quality based on the factor to	<p>The media player embedded in the web page of the Brazzers Premium Site receives a streamlet following a fulfilled request by the end user station and subsequently displays the received streamlet. The streamlet is communicated over the one or more network connections for the selected stream.</p> <p>In response to requesting the first streamlet via an HTTP GET request, as shown above, the media player embedded in the web page of the Brazzers Premium Site receives the requested streamlet from the server via the</p>				

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Claim Element	Example Infringement Evidence																									
achieve continuous playback of the video using the files of the highest quality one of the copies determined sustainable at that time,	<p>one or more network connections. <i>See e.g.</i>, RFC 8216 at 4 (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”); <i>id.</i> at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”)).</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete																						
[8.10] wherein the making the successive determinations to	As explained above, the media player embedded in the web page of the Brazzers Premium Site receives the requested streamlets via one or more network connections in accordance with the determinations made based upon available bandwidth. This includes shifting to display higher resolution streamlets when the available																									

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Claim Element	Example Infringement Evidence																				
shift comprises upshifting to a higher quality one of the different copies when the at least one factor is greater than a first threshold and downshifting to a lower quality one of the different copies when the at least one factor is less than a second threshold; and	bandwidth can support a higher resolution of the video <i>and</i> shifting to display lower resolution streamlets when the available bandwidth can no longer support the then-displayed resolution of the video.																				
	In response to requesting the first streamlet via an HTTP GET request, as shown above, the media player embedded in the web page of the Brazzers Premium Site receives the requested streamlet from the server via the one or more network connections. <i>See e.g.</i> , RFC 8216 at 4 (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”); <i>id.</i> at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”).																				
	HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).																				
	For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests:																				
	<table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-43-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-44-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-45-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-43-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-44-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-45-f1-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status																	
GET	stream-private-ht.project1content.com	.../hls/.../seg-43-f1-v1-a1.ts?...	...	Complete																	
GET	stream-private-ht.project1content.com	.../hls/.../seg-44-f1-v1-a1.ts?...	...	Complete																	
GET	stream-private-ht.project1content.com	.../hls/.../seg-45-f1-v1-a1.ts?...	...	Complete																	

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Claim Element	Example Infringement Evidence					
	GET	stream-private-ht.project1content.com	.../hls/.../seg-46-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-47-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-48-f3-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-49-f3-v1-a1.ts?...	...	Complete	
[8.11] presenting the video by playing back the requested media files with the media player on the end user station in order of ascending playback time.	<p>The media player embedded in the web page of the Brazzers Premium Site provides the streamlets of the video program to the end user in order of ascending playback time.</p> <p>Brazzers confirms that the media player embedded in the web page of its Brazzers Premium Sites provides video playback to end user stations over a network connection on the Brazzers support webpage, https://www.support.brazzers.com. There, Brazzers troubleshoots problems end users may have with HLS and instructs users on how to optimize their video playback experience. <i>See</i> https://www.support.brazzers.com/technical.</p>					

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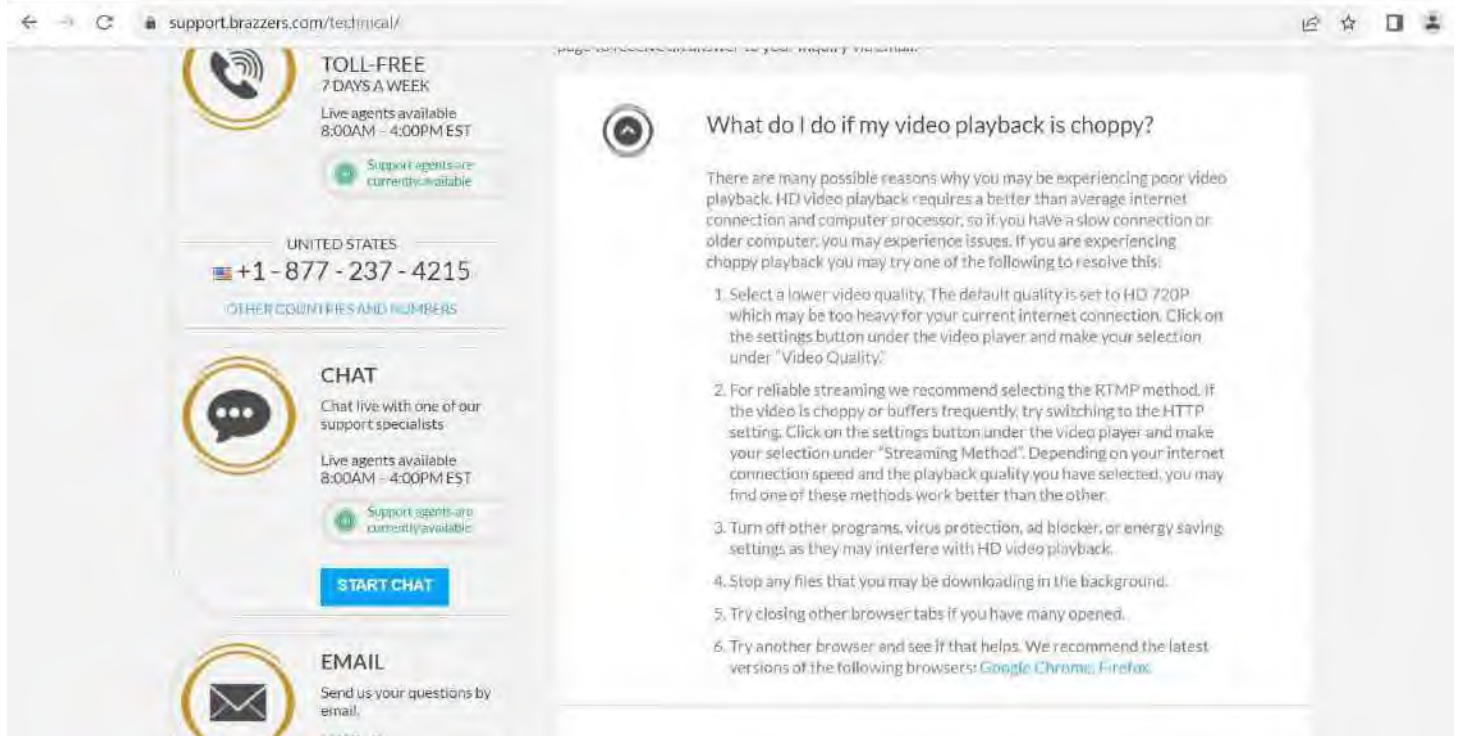
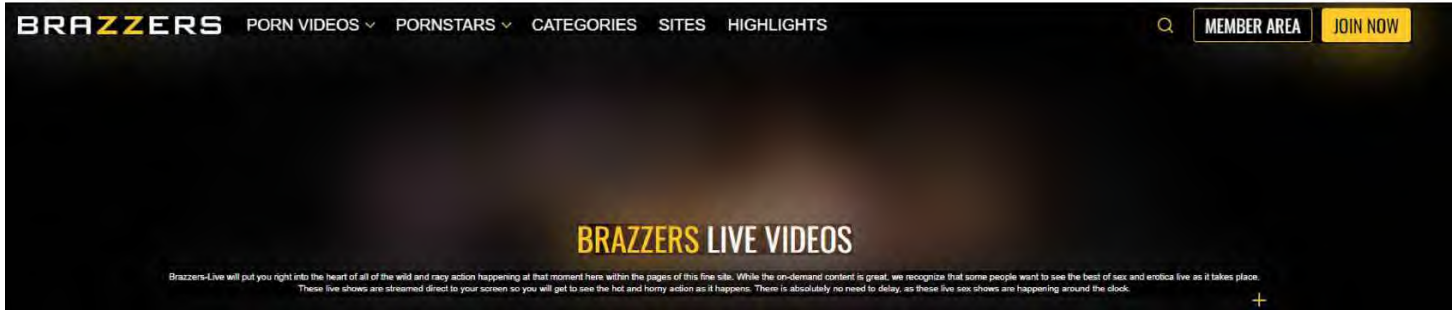
Claim Element	Example Infringement Evidence
	 <p>The screenshot shows the support.brazzers.com/technical/ website. On the left sidebar, there are three contact options: TOLL-FREE (7 DAYS A WEEK, Live agents available 8:00AM - 4:00PM EST, Support agents are currently available), CHAT (Chat live with one of our support specialists, Live agents available 8:00AM - 4:00PM EST, Support agents are currently available, and a START CHAT button), and EMAIL (Send us your questions by email). The main content area is titled 'What do I do if my video playback is choppy?' and contains a paragraph explaining that HD video playback requires a better than average internet connection and computer processor. It then lists six steps to resolve choppy playback: 1. Select a lower video quality (default is HD 720P), 2. For reliable streaming, select the RTMP method (switching to HTTP if the video is choppy or buffers frequently), 3. Turn off other programs, virus protection, ad blocker, or energy saving settings, 4. Stop any files that may be downloading in the background, 5. Try closing other browser tabs if you have many opened, and 6. Try another browser (recommending Google Chrome and Firefox).</p>

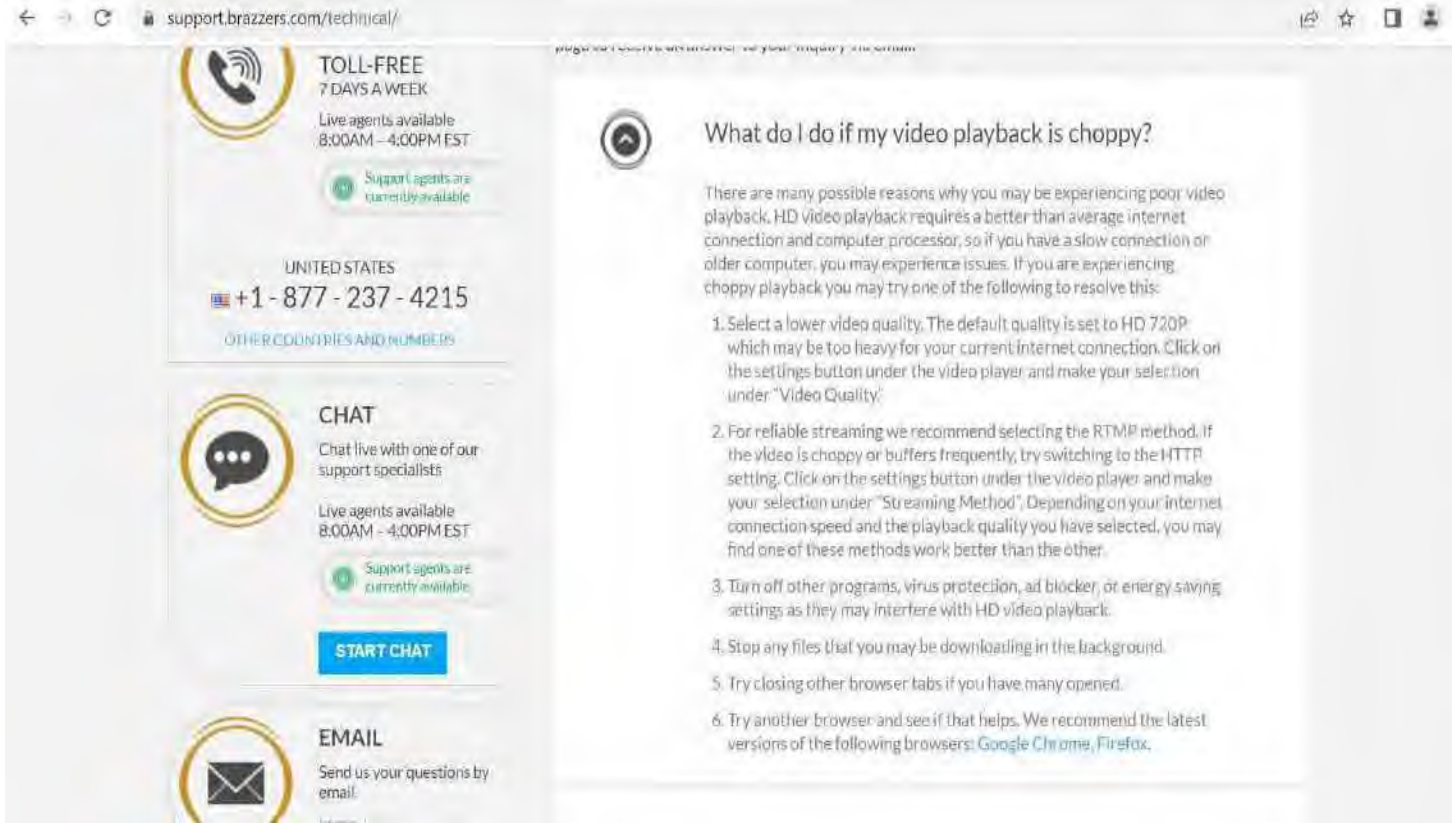
EXHIBIT ZZ

U.S. Patent No. 10,469,554 to Brazzers

The following claim chart shows exemplary aspects of certain streaming services and products provided by MG Premium Ltd or any other Defendants, using the Brazzers premium website, available at www.brazzers.com (“Brazzers Premium Site”), that infringe claims 16, 17, and 20 of the ’554 Patent. The chart is exemplary and should not be read to limit DISH’s assertions against MG Premium Ltd, Brazzers, or any other streaming services offered by MG Premium Ltd or other Defendants as to the services or products described below. The chart should not be read to limit DISH’s assertions to the patent claim charted below. Nor should the chart below be read to limit how MG Premium Ltd and/or other Defendants infringe the claim below.

Claim Element	Example Infringement Evidence
<p>[16.pre] An end user station to stream a live event video over a network from a server for playback of the video, the content player device comprising:</p>	<p>The Brazzers Premium Site provides information that permits an end user content player device to stream a video over a network from a server for playback of the video. The streams include live streams that are obtained from one or more servers affiliated with the Brazzers Premium Site over a network using an internet connection. See https://www.brazzers.com/category/462/brazzers-live (partially shown below, edited to blur explicit background).</p>  <p>The images in this chart are from the Brazzers Premium Site through a web browser, such as Microsoft Edge, Google Chrome, or iOS Safari. In addition, the media player embedded in the web page of the Brazzers Premium Site is available to run on content player devices supporting all the latest versions of major web browsers. See https://www.support.brazzers.com/technical/ (“[Brazzers] support[s] all the latest versions of major web browsers....”). See also <i>id.</i> (showing, in part, that an internet connection is required in order to stream videos):</p>

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Claim Element	Example Infringement Evidence
	 <p>https://www.support.brazzers.com/technical/</p> <p>Tests were conducted on videos offered over the Brazzers Premium Site accessed on a personal computer. As part of the testing, the device accessing Brazzers Premium Site was connected to the internet through the Charles Proxy application, which enabled the ability to proxy the device's network traffic, to view the device's network traffic, and to throttle the network's available bandwidth. Thus, the test simulated how Brazzers responded to lower and higher bandwidths. For the current test, a video titled "All Dolled Up – Try Me" was selected, and at various times throughout the playback of the video, bandwidth was restricted to download speeds of 2048 kbps.</p>

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Claim Element	Example Infringement Evidence
	<p>As observed through the tests, when the user selects a video from the available videos, the media player embedded in the web page of the Brazzers Premium Site displays more details regarding the video and provides the user with the option to view the video.</p> <p>Selecting the icon corresponding to a video causes that video and other materials to be streamed and displayed on the user's device.</p> <p>With respect to adaptively receiving the digital stream from the video server over the network, the media player embedded in the web page of the Brazzers Premium Site accesses adaptive bitrate streams from a server affiliated with the Brazzers Premium Site over a network using the HTTP Live Streaming ("HLS") adaptive bitrate streaming protocol. HLS is "a protocol for transferring unbounded streams of multimedia data." Request For Comments: 8216 – HTTP Live Streaming, August 2017 ("RFC 8216") at 1. Using HLS, "a client can receive a continuous stream of media from a server for concurrent presentation." RFC 8216 at 4. HLS "allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality." RFC 8216 at 4. With HLS, "[c]lients should switch between different Variant Streams to adapt to network conditions." RFC 8216 at 5.</p> <p>As explained in further detail below, Brazzers provides an end user station to stream a live event video over a network from a server for playback of the video.</p>
[16.1] a processor;	<p>Brazzers's content is accessible on end users' devices. Example end user devices include personal computers, Macintosh computers, Apple iPhones, Apple iPads, Android phones, Android tablets, and smart TV devices equipped to access the internet via one or more Internet connections. The end users' devices include a processor configured to enable video streaming.</p> <p>The screenshots in this chart of the Brazzers Premium Site are from accessing the Brazzers Premium Site on an Apple iPhone or Windows computer. On information and belief, at least one of the devices capable of accessing and viewing Brazzers content contains a processor.</p>
[16.2] a digital processing apparatus memory	<p>As explained above, the Brazzers Premium Site runs on end users' devices. Example end user devices include personal computers, Macintosh computers, Apple iPhones, Apple iPads, Android phones, Android tablets, and smart TV devices equipped to access the internet via one or more Internet connections. The end users' devices</p>

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Claim Element	Example Infringement Evidence
<p>device comprising non-transitory machine-readable instructions that, when executed, cause the processor to:</p> <p>establish one or more network connections between the end user station and the server, wherein the server is configured to access at least one of a plurality of groups of streamlets;</p>	<p>include a processor configured to enable video streaming. The end users' devices also include memory devices having non-transitory machine-readable instructions that cause an end user device to establish one or more network connections between the end user station and the one or more Brazzers servers hosting Brazzers videos.</p> <p>Through the established network connection, the devices streaming Brazzers access video programs that are stored on one or more servers for display on the devices via the media player embedded in the web page of the Brazzers Premium Site.</p> <p>The one or more servers hosting Brazzers' video programs store streamlets corresponding to particular segments of a video program, and each streamlet is encoded at one of numerous resolutions. Each of the stored streams, or variant playlists, comprises a plurality of streamlets at the same resolution. The arrangements of each variant playlist ensure the sequential playback of the streams at a resolution supported by the available network bandwidth.</p> <p>For example, in the instant test of a video titled "All Dolled Up—Try Me," the end user station: established a network connection, connected with the one or more Brazzers servers, and made an HTTP GET request to stream-private-ht.project1content.com for a master manifest located at the following path: /hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urls et/master.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D (hereafter referred to as the "Master Manifest" or "master.m3u8"). The Master Manifest returned the following contents, reflecting the Uniform Resource Indicators ("URIs") of the various variant playlists hosting at least a group of streamlets:</p> <div style="border: 1px solid black; padding: 5px;"> <p>#EXTM3U</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f1-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div>

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p> <p>index-f5-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	<p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260

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Claim Element	Example Infringement Evidence												
	<p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each variant playlist, or version playlist, is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token¹</th></tr> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> <tr> <td>3023543 Bandwidth</td><td>index-f3-v1-a1.m3u8?...</td></tr> <tr> <td>4816531 Bandwidth</td><td>index-f4-v1-a1.m3u8?...</td></tr> <tr> <td>6660563 Bandwidth</td><td>index-f5-v1-a1.m3u8?...</td></tr> </table> <p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p>	Bandwidth	Token ¹	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...	3023543 Bandwidth	index-f3-v1-a1.m3u8?...	4816531 Bandwidth	index-f4-v1-a1.m3u8?...	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
Bandwidth	Token ¹												
915420 Bandwidth	index-f1-v1-a1.m3u8?...												
1654630 Bandwidth	index-f2-v1-a1.m3u8?...												
3023543 Bandwidth	index-f3-v1-a1.m3u8?...												
4816531 Bandwidth	index-f4-v1-a1.m3u8?...												
6660563 Bandwidth	index-f5-v1-a1.m3u8?...												

¹ Token abbreviated for readability. The abbreviated portions of each token are the same across all bandwidth versions.

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Claim Element	Example Infringement Evidence				
	<p>The end user device accessing the Brazzers Premium Site uses HTTPS GET requests to retrieve the segments, or streamlets, of the encoded video specified in the file above from the one or more servers hosting Brazzers content.</p> <p>The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. <i>See</i> RFC 8216 at 38 (“The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played.”); <i>see also</i> RFC 8216 at 4 (“A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.”).</p> <p>As shown by the Charles Proxy application file, partially reproduced below, the streamlet video files are hosted on a server and available at stream-private-ht.project1content.com.</p>				
	Method	Host	Path ²	...	Status
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-70-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2	...	Complete

² Video path abbreviated for readability throughout.

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Claim Element	Example Infringement Evidence				
			160p,.mp4.urlset/seg-71-f3-v1-a1.ts?...		
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-72-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-73-f3-v1-a1.ts?...	...	Complete
<p>Importantly, the test video “All Dolled Up—Try Me” is a video uploaded to servers hosting Brazzers content. On information and belief, the live event videos offered to Brazzers viewers are similarly encoded at multiple resolutions, hosted on one or more servers, , and accessed through HTTP Get Requests by end users’ devices. similarly perform the demonstrated claim limitations.</p> <p>As shown in the test data, Brazzers selects the 3023543 Bandwidth version of the stream and makes a request for the corresponding playlist. The Brazzers Server(s) returns the playlist file with the following contents:</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <pre>#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES</pre> </div>					

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p>seg-1-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-2-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-3-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-4-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">[***]</p> <pre>#EXTINF:4.000, seg-556-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-557-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-558-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:0.616, seg-559-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-ENDLIST</pre> </div> <p>The variant playlist file is a HLS playlist. Each line in the file path “index-f3-v1-a1.m3u8?...” that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the variant playlist shown above, the segments of the video are separated by commercial segments. Each of the streamlets (except the first and final streamlets of each playlist) is 4.000 seconds long and returns sequential segments of the video program and/or commercial.</p>

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Claim Element	Example Infringement Evidence
	<p>As long as the viewer continues watching the video and the bandwidth is adequate to support the chosen resolution, the end user device accessing the Brazzers Premium Site will continue to request (and Brazzers will provide) streamlets corresponding to the current, chosen resolution.</p> <p>Thus, Brazzers provides a digital processing apparatus memory device comprising non-transitory machine-readable instructions that, when executed, cause the end user station's processor to: establish one or more network connections between the end user station and the server, wherein the server is configured to access at least one of a plurality of groups of streamlets.</p>
<p>[16.3] wherein the live event video is encoded at a plurality of different bitrates to create a plurality of streams including at least a low quality stream, a medium quality stream, and a high quality stream, each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets encoded at the same</p>	<p>As mentioned above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate.</p> <p>In the instant test, a personal computer accessing the Brazzers Premium Site through a web browser makes a HTTPS GET request to stream-private-hl.project1content.com for the Master Manifest of a video program titled "All Dolled Up—Try Me." As shown in the excerpts of the Master Manifest below, the video available is encoded at 5 different bitrates.</p> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <pre>#EXTM3U #EXT-X-STREAM-INF:PROGRAM- ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3 Zs4%3D</pre> </div>

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Claim Element	Example Infringement Evidence
<p>respective one of the different bitrates, each group comprising at least first and second streamlets, each of the streamlets corresponding to a portion of the live event video;</p>	<p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p> <p>index-f5-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence												
	<p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token</th></tr> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> <tr> <td>3023543 Bandwidth</td><td>index-f3-v1-a1.m3u8?...</td></tr> <tr> <td>4816531 Bandwidth</td><td>index-f4-v1-a1.m3u8?...</td></tr> <tr> <td>6660563 Bandwidth</td><td>index-f5-v1-a1.m3u8?...</td></tr> </table>	Bandwidth	Token	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...	3023543 Bandwidth	index-f3-v1-a1.m3u8?...	4816531 Bandwidth	index-f4-v1-a1.m3u8?...	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
Bandwidth	Token												
915420 Bandwidth	index-f1-v1-a1.m3u8?...												
1654630 Bandwidth	index-f2-v1-a1.m3u8?...												
3023543 Bandwidth	index-f3-v1-a1.m3u8?...												
4816531 Bandwidth	index-f4-v1-a1.m3u8?...												
6660563 Bandwidth	index-f5-v1-a1.m3u8?...												

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Claim Element	Example Infringement Evidence				
	<p>Each of the bandwidth streams includes segments that encode the same portion of the video at various qualities. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.</p> <table border="1"> <thead> <tr> <th>Bandwidth</th><th>Streamlet (<u>segment</u>)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO 7JKFSmRbzI3Zs4%3D #EXTINF:4.000, </td></tr> </tbody> </table>	Bandwidth	Streamlet (<u>segment</u>)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u> -f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO 7JKFSmRbzI3Zs4%3D #EXTINF:4.000,
Bandwidth	Streamlet (<u>segment</u>)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u> -f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO 7JKFSmRbzI3Zs4%3D #EXTINF:4.000,				

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Claim Element	Example Infringement Evidence	
		<p><u>seg-2</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-3</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-5</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	3023543 Bandwidth	<p>#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <p><u>seg-1</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</p> <p><u>seg-5</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <p>On information and belief, playlists for the other resolution variants also include these segments, or streamlets, also arranged in ascending chronological order and corresponding to the same portion of the video provided from the Brazzers server(s). Also on information and belief, other videos streamed using Brazzers and the media player embedded in the web page of the Brazzers Premium Site (such as live videos) provide the same limitations.</p>

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Claim Element	Example Infringement Evidence
	<p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>The video server stores the video wherein “each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets.” The HLS protocol indicates that “[a] Media Playlist contains a list of Media Segments, which, when played sequentially, will play the multimedia presentation.” RFC 8216 at 4; <i>see also</i> RFC 8216 at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation.”).</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of</p>

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Claim Element	Example Infringement Evidence
	<p>the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p>
<p>[16.4] wherein at least one of the low quality stream, the medium quality stream, and the high quality stream is encoded at a bitrate of no less than 600 kbps; and</p>	<p>As explained above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate. At least one of the low quality stream, the medium quality stream, and the high quality stream is encoded at a bitrate of no less than 600 kbps.</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260
<p>[16.5] wherein the first streamlets of each of the low quality stream, the medium quality stream and the high quality stream each has an equal playback duration and each of the first streamlets encodes</p>	<p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p>

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Claim Element	Example Infringement Evidence				
<p>the same portion of the live event video at a different one of the different bitrates;</p>	<p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program. As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user device accessing Brazzers uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The video files are hosted at stream-private-ht.project1content.com, and each streamlet (except the first and final streamlets) is 4.000 seconds long. The first streamlet of each of the 915420 Bandwidth and the 3023543 Bandwidth is 3.000 seconds long.</p> <p>The received playlists at each resolution includes video streamlets, such as: “seg-1-f[X]-v1-a1.ts,” “seg-2-f[X]-v1-a1.ts,” “seg-3-f[X]-v1-a1.ts,” “seg-4-f[X]-v1-a1.ts,” and “seg-5-f[X]-v1-a1.ts,” where [X] corresponds to a unique identifier for each bandwidth version. Within each bandwidth playlist file, there are the 559 .ts files, each corresponding to the same segmented moments in the video.</p> <table border="1"> <thead> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (<u>portion of live stream</u>)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, </td></tr> </tbody> </table>	Bandwidth Version	File line (#EXTINF: length) (<u>portion of live stream</u>)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,
Bandwidth Version	File line (#EXTINF: length) (<u>portion of live stream</u>)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,				

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Claim Element	Example Infringement Evidence
	<p><u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p style="text-align: right;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:4.000,</p> <p><u>seg-557</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-558</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p><u>seg-559</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <p><u>seg-557-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-558-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p><u>seg-559-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p> </div> <p>On information and belief, the other bandwidth file playlists also comprise 559 streamlets, each corresponding to the same portion of video as is respective counterpart in the streamlet files shown above. Similarly, on information and belief, the other bandwidth version streamlets are the same durations as the 915420 Bandwidth and 3023543 Bandwidth versions.</p> <p>The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are “in relation to the beginning of the video.” For example, HLS requires that “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6; <i>see also</i> RFC 8216 at 45 (“A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the</p>

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Claim Element	Example Infringement Evidence						
	relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments.”).						
[16.6] select a specific one of the low quality stream, the medium quality stream, and the high quality stream based upon a determination by the end user station to select a higher or lower bitrate version of the streams;	<p>As explained above, the end user device requests segments, or streamlets, from the one or more servers to display Brazzers content on an end user device. The video segments are presented in sequential ascending chronological order, based upon the previously requested and/or fulfilled streamlet, defined by the end user station running the Brazzers Premium Site.</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>As explained above, the master playlist for the instant test video—“All Dolled Up, Try Me”—shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table border="1"> <thead> <tr> <th>Bandwidth</th><th>Token</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> </tbody> </table>	Bandwidth	Token	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...
Bandwidth	Token						
915420 Bandwidth	index-f1-v1-a1.m3u8?...						
1654630 Bandwidth	index-f2-v1-a1.m3u8?...						

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Claim Element	Example Infringement Evidence																												
	3023543 Bandwidth	index-f3-v1-a1.m3u8?...																											
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...																											
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...																											
	The end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon a determination that the higher bitrate can be supported, the end user station switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.																												
	<table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>					Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...
Method	Host	Path	...	Status																									
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete																									
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete																									
GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete																									
GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete																									
Additionally, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow Brazzers to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39.																													

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Claim Element	Example Infringement Evidence				
	Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.				
[16.7] place a streamlet request to the server over the one or more network connections for the first streamlet of the selected stream;	<p>As explained above, the media player embedded in the web page of the Brazzers Premium Site presents the end user with the sequential video streamlets after HTTPS get requests are fulfilled by the one or more Brazzers servers. The requests are transmitted automatically, without the need for repeated user input requesting the sequential streamlets.</p> <p>The variant playlists file are HLS playlists. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user station accessing the Brazzers Premium Site requests and retrieves the segments of the encoded stream specified in the file above. The video files are hosted at stream-private-ht.project1content.com, and each streamlet (except the first and final streamlets) is 4.000 seconds long.</p> <p>The received playlists at each resolution includes video streamlets, such as: “seg-1-f[X]-v1-a1.ts,” “seg-2-f[X]-v1-a1.ts,” “seg-3-f[X]-v1-a1.ts,” “seg-4-f[X]-v1-a1.ts,” and “seg-5-f[X]-v1-a1.ts,” where [X] corresponds to a unique identifier for each bandwidth version. Within each bandwidth playlist file, there are the 559 .ts files, each corresponding to the same segmented moments in the video.</p> <table border="1"> <thead> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (portion of live stream)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, </td></tr> </tbody> </table>	Bandwidth Version	File line (#EXTINF: length) (portion of live stream)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,
Bandwidth Version	File line (#EXTINF: length) (portion of live stream)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,				

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		<p>#EXTINF:4.000,</p> <p><u>seg-557</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-558</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p><u>seg-559</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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	<p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p style="text-align: right;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <p><u>seg-557-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-558-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p><u>seg-559-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p> </div> <p>On information and belief, the other bandwidth file playlists also comprise 559 streamlets, each corresponding to the same portion of video as is respective counterpart in the streamlet files shown above.</p> <p>The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are “in relation to the beginning of the video.” For example, HLS requires that “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6; <i>see also</i> RFC 8216 at 45 (“A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments.”).</p>

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Claim Element	Example Infringement Evidence										
	<p>Indeed, to adapt playback between different bitrate Variant Streams, the end user station “can use the EXTINF durations and the constraints in Section 6.2.4 to determine the approximate location of corresponding media. Once media from the new Variant Stream has been loaded, the timestamps in the Media Segments can be used to synchronize the old and new timelines precisely.” RFC 8216 at 47.</p> <p>Each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to streamlet encoding the same portion of the video in the high quality stream; allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. Further, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow Brazzers to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status							
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete							

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Claim Element	Example Infringement Evidence				
	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
	<p>The Brazzers “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player, “[t]he client,” which is the end user station accessing the Brazzers Premium Site, “SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to playback normally, the end user station must request a plurality of Brazzers files with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p> <p>As shown above, although the end user station initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted.</p> <p>On information and belief, playlists for the other resolution variants also include these segments, which correspond to the same portion of the video provided from Brazzers’s server(s).</p>				
[16.8] receive the requested first streamlet from the server via the one	The end user station accessing the Brazzers Premium Site places a request to the Brazzers server(s) over the one or more network connections for the selected stream and receives the requested streamlet from the Brazzers server(s) via the established network connection between the end user station and the server(s).				

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Claim Element	Example Infringement Evidence																													
or more network connections; and	<p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p>																													
	<table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>					Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
	Method	Host	Path	...	Status																									
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GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete																										
<p>Brazzers “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player, “[t]he client,” which is the end user station accessing the Brazzers Premium Site, “SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to</p>																														

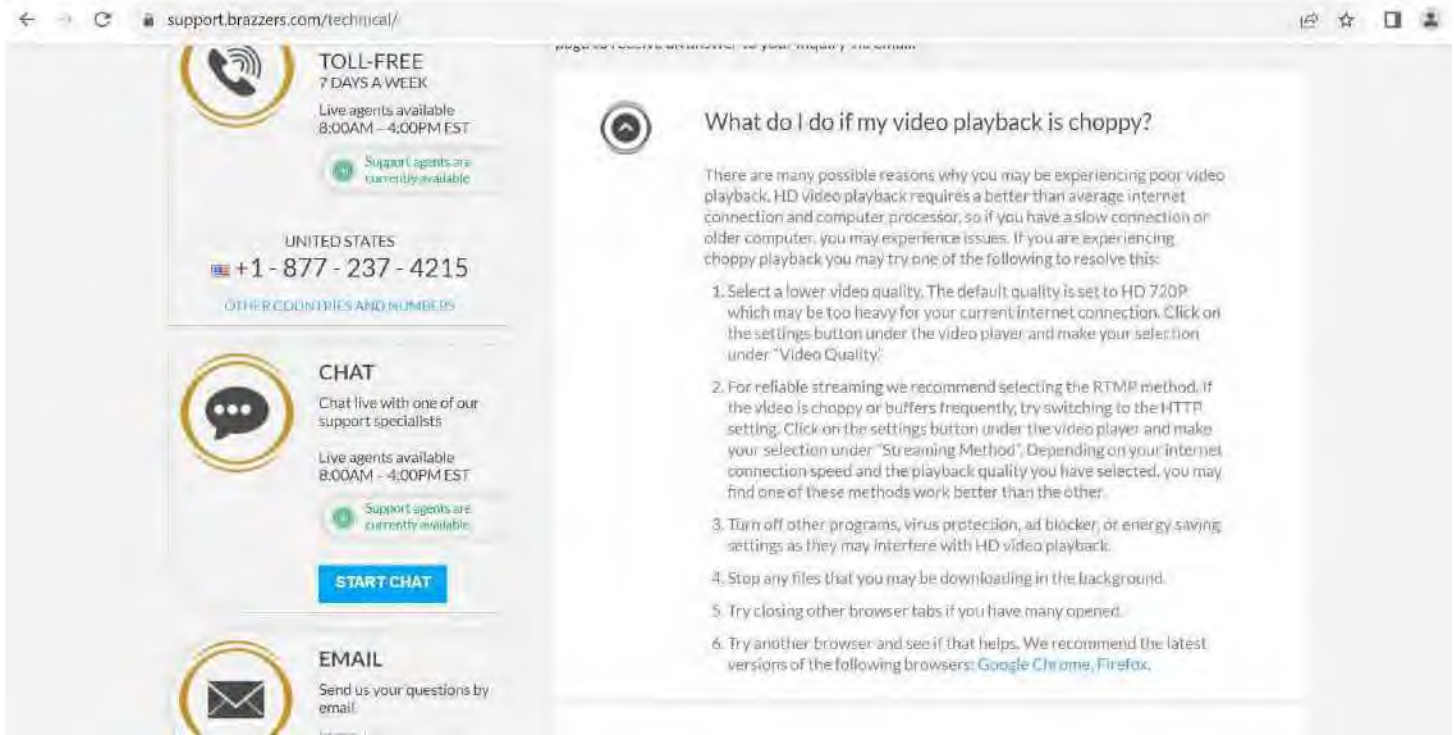
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	<p>playback normally, the end user station must request a plurality of files with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p> <p>As shown above, although the end user station initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted. Those requests, as shown above, are “Completed,” meaning the streamlets were received from the one or more Brazzers servers.</p>															
[16.9] provide the received first streamlet for playback of the live event video.	<p>Brazzers server(s) provide the received streamlets to the media player embedded in the web page of the Brazzers Premium Site.</p> <p>In response to requesting the first streamlet via an HTTP GET request, as shown above, the end user station accessing the Brazzers Premium Site receives the requested streamlet from the server via the one or more network connections. <i>See e.g.</i>, RFC 8216 at 4 (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”); <i>id.</i> at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”)).</p> <p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status												
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete												
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete												

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Claim Element	Example Infringement Evidence				
	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
	<p>Brazzers confirms that the media player it embeds in its web pages provides video playback to end user stations over a network connection on the Brazzers support webpage, https://www.support.brazzers.com. There, Brazzers troubleshoots problems end users may have with HLS and instructs users on how to optimize their video playback experience. See https://www.support.brazzers.com/technical.</p>				

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	 <p>The screenshot shows the support.brazzers.com/technical/ page. On the left, there are three contact options: TOLL-FREE (7 DAYS A WEEK, Live agents available 8:00AM - 4:00PM EST, Support agents are currently available), CHAT (Chat live with one of our support specialists, Live agents available 8:00AM - 4:00PM EST, Support agents are currently available), and EMAIL (Send us your questions by email). A 'START CHAT' button is located below the chat section. On the right, there is a section titled 'What do I do if my video playback is choppy?' which explains that there are many possible reasons for poor video playback and lists six steps to resolve the issue: 1. Select a lower video quality, 2. For reliable streaming we recommend selecting the RTMP method, 3. Turn off other programs, virus protection, ad blocker, or energy saving settings, 4. Stop any files that you may be downloading in the background, 5. Try closing other browser tabs if you have many opened, and 6. Try another browser and see if that helps.</p>
17. The end user station of claim 16, wherein the second streamlet of each of the groups of streamlets each has the same second duration and corresponds to the	<p>As described above, each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. Additionally, the second streamlet of each of the groups of streamlets each has the same second duration and corresponds to the same second portion of the live event video in the low quality stream, the medium quality stream, and the high quality stream, the second streamlet of the low quality stream having the same bitrate as the first streamlet of the low quality stream.</p> <p>As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant</p>

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Claim Element	Example Infringement Evidence				
<p>the same second portion of the live event video in the low quality stream, the medium quality stream, and the high quality stream, the second streamlet of the low quality stream having the same bitrate as the first streamlet of the low quality stream.</p>	<p>Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program. As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user device accessing the Brazzers Premium Site uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The video files are hosted at stream-private-hl.project1content.com, and each streamlet (except the first and final streamlets) is 4.000 seconds long. The first streamlet of each of the 915420 Bandwidth and the 3023543 Bandwidth is 3.000 seconds long.</p> <p>The received playlists at each resolution includes video streamlets, such as: “seg-1-f[X]-v1-a1.ts,” “seg-2-f[X]-v1-a1.ts,” “seg-3-f[X]-v1-a1.ts,” “seg-4-f[X]-v1-a1.ts,” and “seg-5-f[X]-v1-a1.ts,” where [X] corresponds to a unique identifier for each bandwidth version. Within each bandwidth playlist file, there are the 559 .ts files, each corresponding to the same segmented moments in the video.</p> <table border="1"> <thead> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (<u>portion of live stream</u>)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES </td></tr> </tbody> </table>	Bandwidth Version	File line (#EXTINF: length) (<u>portion of live stream</u>)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES
Bandwidth Version	File line (#EXTINF: length) (<u>portion of live stream</u>)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES				

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	<p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence	
		<p style="text-align: right;">[***]</p> <p>#EXTINF:4.000, <u>seg-556-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-557-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-558-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616, <u>seg-559-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p>

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: right;">[***]</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <p><u>seg-556-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-557-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-558-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p><u>seg-559-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p> </div> <p>On information and belief, the other bandwidth file playlists also comprise 559 streamlets, each corresponding to the same portion of video as is respective counterpart in the streamlet files shown above. Similarly, on information and belief, the other bandwidth version streamlets are the same durations as the 915420 Bandwidth and 3023543 Bandwidth versions.</p> <p>The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are “in relation to the beginning of the video.” For example, HLS requires that “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue</p>

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	<p>uninterrupted.” RFC 8216 at 6; <i>see also</i> RFC 8216 at 45 (“A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments.”).</p>
<p>20. The end user station of claim 16, wherein the first streamlets of the low quality stream, the medium quality stream, and the high quality stream are available before the live event is complete.</p>	<p>The live event videos offered on the Brazzers Premium Site are stored on the one or more Brazzers servers as streamlets, and the first streamlets of the low quality stream, the medium quality stream, and the high quality stream are available before the live event is complete.</p> <p>The one or more servers store streamlets corresponding to particular segments of a video program, and each streamlet is encoded at one of numerous resolutions. Each of the stored streams, or variant playlists, comprises a plurality of streamlets at the same resolution. The arrangements of each variant playlist ensure the sequential playback of the streams at a resolution supported by the available network bandwidth.</p> <p>For example, in the instant test of a video titled “All Dolled Up—Try Me,” the end user station: established a network connection, connected with the one or more Brazzers servers, and made an HTTP GET request to stream-private-hl.project1content.com for a master manifest located at the following path: /hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/master.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D (hereafter referred to as the “Master Manifest” or “master.m3u8”). The Master Manifest returned the following contents, reflecting the Uniform Resource Indicators (“URIs”) of the various variant playlists hosting at least a group of streamlets:</p> <div style="border: 1px solid black; padding: 5px;"> <p>#EXTM3U</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f1-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div>

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	<p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p> <p>index-f5-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	<p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260

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	<p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token³</th></tr> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> <tr> <td>3023543 Bandwidth</td><td>index-f3-v1-a1.m3u8?...</td></tr> <tr> <td>4816531 Bandwidth</td><td>index-f4-v1-a1.m3u8?...</td></tr> <tr> <td>6660563 Bandwidth</td><td>index-f5-v1-a1.m3u8?...</td></tr> </table> <p>Each of the bandwidth streams includes segments that encode the same portion of the video at various qualities. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p>	Bandwidth	Token ³	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...	3023543 Bandwidth	index-f3-v1-a1.m3u8?...	4816531 Bandwidth	index-f4-v1-a1.m3u8?...	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
Bandwidth	Token ³												
915420 Bandwidth	index-f1-v1-a1.m3u8?...												
1654630 Bandwidth	index-f2-v1-a1.m3u8?...												
3023543 Bandwidth	index-f3-v1-a1.m3u8?...												
4816531 Bandwidth	index-f4-v1-a1.m3u8?...												
6660563 Bandwidth	index-f5-v1-a1.m3u8?...												

³ Token abbreviated for readability. The abbreviated portions of each token are the same across all bandwidth versions.

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	<p>The end user device accessing the Brazzers Premium Site uses HTTPS GET requests to retrieve the segments, or streamlets, of the encoded video specified in the file above.</p> <p>The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. <i>See</i> RFC 8216 at 38 (“The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played.”); <i>see also</i> RFC 8216 at 4 (“A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.”).</p> <p>As shown by the Charles Proxy application file, partially reproduced below, the streamlet video files are hosted on a server and available at stream-private-ht.project1content.com.</p>				
	Method	Host	Path ⁴	...	Status
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-70-f3-v1-a1.ts?...	...	Complete

⁴ Video path abbreviated for readability throughout.

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Claim Element	Example Infringement Evidence				
			160p,.mp4.urlset/seg-71-f3-v1-a1.ts?...		
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-72-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-73-f3-v1-a1.ts?...	...	Complete
<p>Importantly, the test video “All Dolled Up—Try Me” is a video uploaded to the Brazzers server(s). On information and belief, the live event videos uploaded to the Brazzers server(s) similarly perform the demonstrated claim limitations.</p> <p>As shown in the test data, the end user station accessing the Brazzers Premium Site selects the 3023543 Bandwidth version of the stream and makes a request for the corresponding variant playlist. The Brazzers server(s) returns the playlist file with the following contents:</p> <div style="border: 1px solid black; padding: 5px;"> <pre>#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES</pre> </div>					

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p>seg-1-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-2-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-3-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-4-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<div>[***]</div> <pre>#EXTINF:4.000, seg-556-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-557-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, seg-558-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:0.616, seg-559-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-ENDLIST</pre> <p>The variant playlist file is a HLS playlist. Each line in the file path “index-f3-v1-a1.m3u8?...” that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the variant playlist shown above, the segments of the video are separated by commercial segments. Each of the streamlets (except the first and final streamlets of each playlist) is 4.000 seconds long and returns sequential segments of the video program and/or commercial.</p>

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Claim Element	Example Infringement Evidence
	<p>As long as the viewer continues watching the video and the bandwidth is adequate to support the chosen resolution, the end user device accessing the Brazzers Premium Site will continue to request (and Brazzers will provide) streamlets corresponding to the current, chosen resolution.</p> <p>Thus, Brazzers provides a digital processing apparatus memory device comprising non-transitory machine-readable instructions that, when executed, cause the end user station's processor to: establish one or more network connections between the end user station and the server, wherein the server is configured to access at least one of a plurality of groups of streamlets.</p>

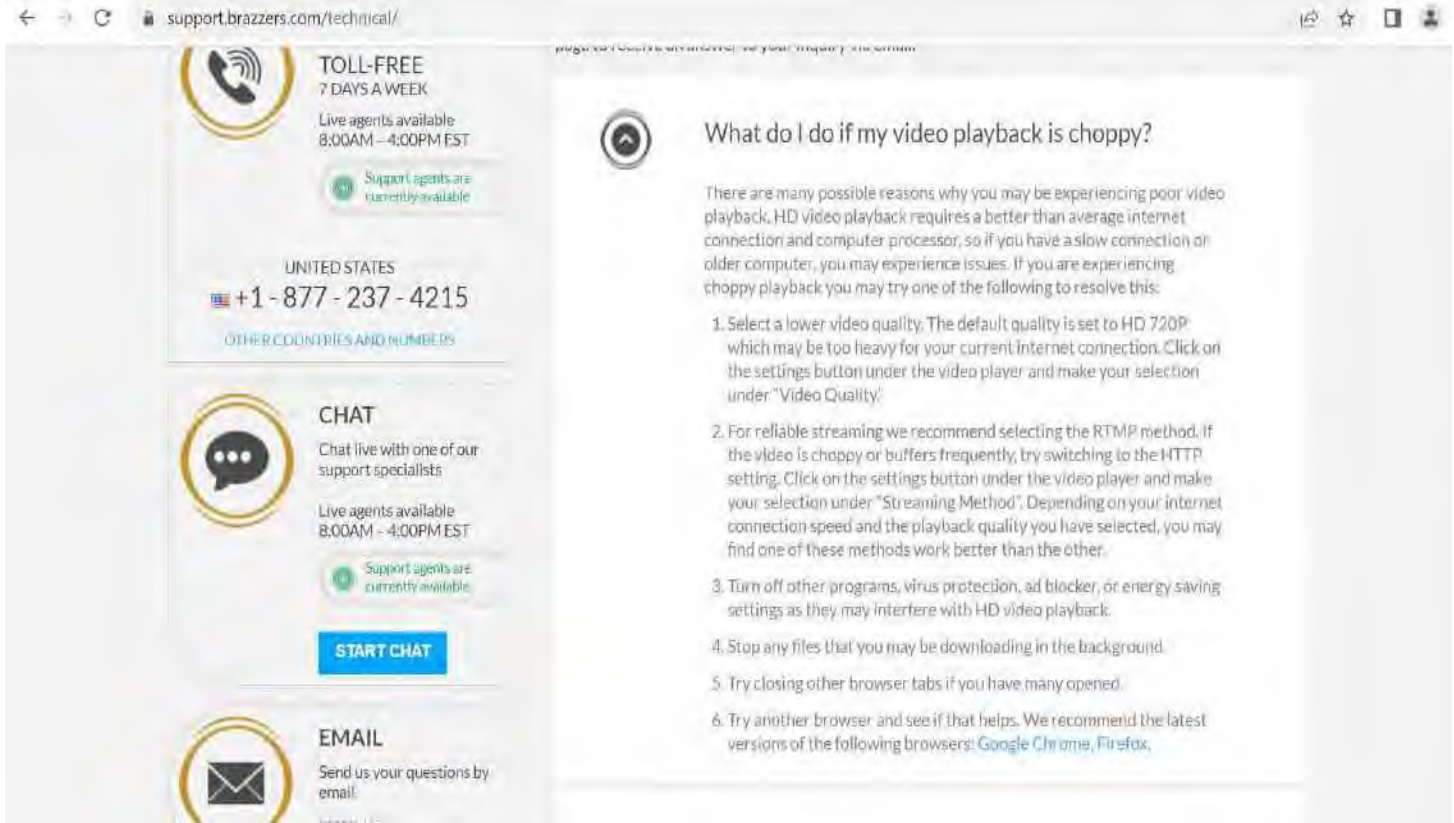
EXHIBIT AAA

U.S. Patent No. 8,868,772 to Brazzers

The following claim chart shows exemplary aspects of certain streaming services and products provided by MG Premium Ltd or any other Defendants, using the Brazzers premium website, available at www.brazzers.com (“Brazzers Premium Site”), that infringe claim 1 of the ’772 Patent. The chart is exemplary and should not be read to limit DISH’s assertions against MG Premium Ltd., Brazzers, or any other streaming services offered by MG Premium Ltd or other Defendants as to the services or products described below. The chart should not be read to limit DISH’s assertions to the patent claim charted below. Nor should the chart below be read to limit how MG Premium Ltd and/or other Defendants infringe the claim below.

Claim Element	Example Infringement Evidence
[1.pre] A method for presenting rate-adaptive streams, the method comprising:	<p>The Brazzers Premium Site provides information that permits an end user device to stream a video over a network from a server for playback of the video. The streams include live streams that are obtained from one or more servers affiliated with the Brazzers Premium Site over a network.</p> <p>The images in this chart are from the Brazzers Premium Site through a web browser, such as Microsoft Edge, Google Chrome, or iOS Safari. In addition, the media player embedded in the web page of the Brazzers Premium Site is available to run on content player devices supporting all the latest versions of major web browsers. <i>See</i> https://www.support.brazzers.com/technical/ (“[Brazzers] support[s] all the latest versions of major web browsers....”). <i>See also id.</i> (showing, in part, that an internet connection is required in order to stream videos):</p>

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Claim Element	Example Infringement Evidence
	 <p>The screenshot shows the support.brazzers.com/technical/ page. On the left, there are three contact options: TOLL-FREE (7 DAYS A WEEK, Live agents available 8:00AM - 4:00PM EST), CHAT (Chat live with one of our support specialists, Live agents available 8:00AM - 4:00PM EST), and EMAIL (Send us your questions by email). On the right, there is a section titled 'What do I do if my video playback is choppy?' with a list of six troubleshooting steps: 1. Select a lower video quality, 2. For reliable streaming we recommend selecting the RTMP method, 3. Turn off other programs, virus protection, ad blocker, or energy saving settings, 4. Stop any files that you may be downloading in the background, 5. Try closing other browser tabs if you have many opened, and 6. Try another browser and see if that helps.</p> <p>https://www.support.brazzers.com/technical/</p> <p>Tests were conducted on videos offered over the Brazzers Premium Site accessed on a personal computer. As part of the testing, the device accessing Brazzers Premium Site was connected to the internet through the Charles Proxy application, which enabled the ability to proxy the device's network traffic, to view the device's network traffic, and to throttle the network's available bandwidth. Thus, the test simulated how Brazzers responded to lower and higher bandwidths. For the current test, a video titled "All Dolled Up – Try Me" was selected, and at various times throughout the playback of the video, bandwidth was restricted to download speeds of 2048 kbps.</p>

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Claim Element	Example Infringement Evidence
	<p>As observed through the tests, when the user selects a video from the available videos, the media player embedded in the web page of the Brazzers Premium Site displays more details regarding the video and provides the user with the option to view the video.</p> <p>Selecting the icon corresponding to a video causes that video and other materials to be streamed and displayed on the user's device.</p> <p>With respect to adaptively receiving the digital stream from the video server over the network, the end user station accessing the Brazzers Premium Site gains access to adaptive bitrate streams from a server affiliated with the Brazzers Premium Site over a network using the HTTP Live Streaming ("HLS") adaptive bitrate streaming protocol. HLS is "a protocol for transferring unbounded streams of multimedia data." Request For Comments: 8216 – HTTP Live Streaming, August 2017 ("RFC 8216") at 1. Using HLS, "a client can receive a continuous stream of media from a server for concurrent presentation." RFC 8216 at 4. HLS "allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality." RFC 8216 at 4. With HLS, "[c]lients should switch between different Variant Streams to adapt to network conditions." RFC 8216 at 5.</p> <p>As explained in further detail below, Brazzers performs a method executable by an end user station that presents rate-adaptive streams received from at least one server over an internet network connection.</p>
[1.1] streaming by a media player operating on an end user station a video from a set of one or more servers,	<p>Brazzers's content is accessible on end users' devices, stored on one or more servers over a network, and displayed to end user devices via a media player embedded in the web page of the Brazzers Premium Site. Brazzers confirms that it provides videos to end user devices through media players on its technical support website, accessible at https://www.support.brazzers.com/technical ("What do I do if my video playback is choppy?").</p> <p>The one or more servers accessible by the end user station accessing the embedded media player store streamlets corresponding to particular segments of a video program, and each streamlet is encoded at one of numerous resolutions.</p> <p>The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. <i>See</i> RFC 8216 at 38 ("The server</p>

U.S. Patent No. 8,868,772 to Brazzers

Claim Element	Example Infringement Evidence				
	<p>must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played.”); <i>see also</i> RFC 8216 at 4 (“A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.”).</p> <p>As shown by the Charles Proxy application file, partially reproduced below, the streamlet video files are hosted on a server accessible via stream-private-ht.project1content.com.</p>				
	Method	Host	Path ¹	...	Status
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-70-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-71-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_	...	Complete

¹ Video path abbreviated for readability throughout.

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Claim Element	Example Infringement Evidence					
			480p,_720p,_1080p,_2160p,.mp4.urlset/seg-72-f3-v1-a1.ts?...			
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-73-f3-v1-a1.ts?...	...	Complete	
[1.2] wherein each of a plurality of different copies of the video encoded at different bitrates is stored as multiple files on the set of servers,	<p>The one or more servers, whose content is accessible by the end user station through a web page on the Brazzers Premium Site, store streamlets corresponding to particular segments of a video program, and each streamlet is encoded at one of numerous resolutions.</p> <p>The numerous streams of the video program displayed by the media player embedded in the web page of the Brazzers Premium Site include a low quality stream, a medium quality stream, and a high quality stream.</p> <p>For example, in the instant test of a video titled “All Dolled Up—Try Me,” the end user station made an HTTP GET request to stream-private-ht.project1content.com for a master manifest located at the following path: /hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/master.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D (hereafter referred to as the “Master Manifest” or “master.m3u8”). The Master Manifest returned the following contents:</p> <div>#EXTM3U #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f1-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</div>					

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p> <p>index-f5-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	<p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260

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Claim Element	Example Infringement Evidence												
	<p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each variant or version playlist is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token²</th></tr> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> <tr> <td>3023543 Bandwidth</td><td>index-f3-v1-a1.m3u8?...</td></tr> <tr> <td>4816531 Bandwidth</td><td>index-f4-v1-a1.m3u8?...</td></tr> <tr> <td>6660563 Bandwidth</td><td>index-f5-v1-a1.m3u8?...</td></tr> </table> <p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p>	Bandwidth	Token ²	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...	3023543 Bandwidth	index-f3-v1-a1.m3u8?...	4816531 Bandwidth	index-f4-v1-a1.m3u8?...	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
Bandwidth	Token ²												
915420 Bandwidth	index-f1-v1-a1.m3u8?...												
1654630 Bandwidth	index-f2-v1-a1.m3u8?...												
3023543 Bandwidth	index-f3-v1-a1.m3u8?...												
4816531 Bandwidth	index-f4-v1-a1.m3u8?...												
6660563 Bandwidth	index-f5-v1-a1.m3u8?...												

² Token abbreviated for readability. The abbreviated portions of each token are the same across all bandwidth versions.

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Claim Element	Example Infringement Evidence
	<p>Brazzers uses HTTPS GET requests to retrieve the segments, or streamlets, of the encoded video specified in the file above from the one or more servers hosting Brazzers content.</p> <p>The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. <i>See</i> RFC 8216 at 38 (“The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played.”); <i>see also</i> RFC 8216 at 4 (“A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.”).</p> <p>As shown in the test data, Brazzers selects the 3023543 Bandwidth version of the stream and makes a request for the corresponding playlist. The Brazzers Server(s) returns the playlist file with the following contents:</p> <div style="border: 1px solid black; padding: 10px;"> <pre>#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, seg-1-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4 %3D #EXTINF:4.000,</pre> </div>

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Claim Element	Example Infringement Evidence
	<p>seg-2-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-3-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-4-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p>seg-556-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-557-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<div style="border: 1px solid black; padding: 10px;"> <pre>#EXTINF:4.000, seg-558-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:0.616, seg-559-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-ENDLIST</pre> </div> <p>The variant playlist file is a HLS playlist. Each line in the file path “index-f3-v1-a1.m3u8?...” that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the variant playlist shown above, the segments of the video are separated by commercial segments. Each of the streamlets (except the first and final streamlets of each playlist) is 4.000 seconds long and returns sequential segments of the video program and/or commercial.</p>
[1.3] wherein each of the multiple files yields a different portion of the video on playback,	<p>As mentioned above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate.</p> <p>In the instant test, a personal computer accessing the Brazzers Premium Site through a web browser makes a HTTPS GET request to stream-private-ht.project1content.com for the Master Manifest. As shown in the excerpts of the Master Manifest below, the video available is encoded at 5 different bitrates.</p> <div style="border: 1px solid black; padding: 5px;"> <pre>#EXTM3U</pre> </div>

U.S. Patent No. 8,868,772 to Brazzers

Claim Element	Example Infringement Evidence
	<p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME-RATE=23.974,CODECS="avc1.64001f,mp4a.40.2"</p> <p>index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence						
	<div style="border: 1px solid black; padding: 5px;"> #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2" index-f5-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D </div> <p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table> <tr> <th>Bandwidth</th><th>Token</th></tr> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> </table>	Bandwidth	Token	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...
Bandwidth	Token						
915420 Bandwidth	index-f1-v1-a1.m3u8?...						
1654630 Bandwidth	index-f2-v1-a1.m3u8?...						

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Claim Element	Example Infringement Evidence	
	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
	As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.	
	Bandwidth	Streamlet (segment)
	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u> -f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p>

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:3.000, <u>seg-1</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-5</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	<p>On information and belief, playlists for the other resolution variants also include these segments, or streamlets, also arranged in ascending chronological order and corresponding to the same portion of the video provided on-demand from Brazzers's server(s).</p>	

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Claim Element	Example Infringement Evidence
	<p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>The video server stores the video wherein “each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets.” The HLS protocol indicates that “[a] Media Playlist contains a list of Media Segments, which, when played sequentially, will play the multimedia presentation.” RFC 8216 at 4; <i>see also</i> RFC 8216 at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation.”).</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of</p>

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Claim Element	Example Infringement Evidence						
	<p>the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p>						
<p>[1.4] wherein the multiple files across the different copies yield the same portions of the video on playback, and</p>	<p>As explained above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate.</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p> <table border="1"> <thead> <tr> <th>Bandwidth</th><th>Token</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> <tr> <td>1654630 Bandwidth</td><td>index-f2-v1-a1.m3u8?...</td></tr> </tbody> </table>	Bandwidth	Token	915420 Bandwidth	index-f1-v1-a1.m3u8?...	1654630 Bandwidth	index-f2-v1-a1.m3u8?...
Bandwidth	Token						
915420 Bandwidth	index-f1-v1-a1.m3u8?...						
1654630 Bandwidth	index-f2-v1-a1.m3u8?...						

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Claim Element	Example Infringement Evidence	
	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
	<p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.</p>	
Bandwidth	Streamlet (<u>segment</u>)	
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u> -f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D	

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f1-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p>

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Claim Element	Example Infringement Evidence
	<div> <p>#EXTINF:3.000, <u>seg-1</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-2</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-3</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-4</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-5</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <p>On information and belief, playlists for the other resolution variants also include these segments, or streamlets, also arranged in ascending chronological order and corresponding to the same portion of the video provided on-demand from the Brazzers's server(s).</p>

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Claim Element	Example Infringement Evidence
	<p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>The video server stores the video wherein “each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets.” The HLS protocol indicates that “[a] Media Playlist contains a list of Media Segments, which, when played sequentially, will play the multimedia presentation.” RFC 8216 at 4; <i>see also</i> RFC 8216 at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation.”).</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of</p>

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Claim Element	Example Infringement Evidence																									
	<p>the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p> <p>For the instant test, the end user station requests and receives the streamlets corresponding to the portion of the video program to be viewed, here, All Dolled Up – Try Me Edition”. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests:</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete																						
[1.5] each of said files having a time index such that the files whose playback is the same portion of the video for each of the different copies have the same time index in	<p>As explained above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate.</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the</p>																									

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Claim Element	Example Infringement Evidence				
<p>relation to the beginning of the video, and wherein the streaming comprises:</p>	<p>continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p> <p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.</p> <table border="1"> <thead> <tr> <th>Bandwidth</th><th>Streamlet (<u>segment</u>)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 </td></tr> </tbody> </table>	Bandwidth	Streamlet (<u>segment</u>)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1
Bandwidth	Streamlet (<u>segment</u>)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1				

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p>

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Claim Element	Example Infringement Evidence	
		<p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div></div> <div> <p><u>seg-5</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <p>On information and belief, playlists for the other resolution variants also include these segments, or streamlets, also arranged in ascending chronological order and corresponding to the same portion of the video provided on-demand from the Brazzers's server(s).</p>
<p>[1.6] requesting by the media player a plurality of sequential ones of the files of one of the copies from the set of servers over a plurality of Transmission Control Protocol (TCP) connections based on the time indexes;</p>	<p>As explained above, the end user station requests (and is provided with) segments, or streamlets, from the one or more Brazzers servers to display on an end user device through the media player embedded in the web page of the Brazzers Premium Site. The streamlets are communicated to the end user station accessing the Brazzers Premium Site via an internet connection pursuant to HLS. HLS requires the use of HTTP communications, which requires the use of at least one connection pursuant to a TCP. The video segments are presented in sequential ascending chronological order, based upon the previously requested and/or fulfilled streamlet, defined by time index relevant to the beginning of the program.</p> <p>Additionally, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user station uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The video files are hosted at stream-private-ht.project1content.com, and each streamlet (except the first and final streamlets) is 4.000 seconds long.</p>

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Claim Element	Example Infringement Evidence				
	<p>The received playlists at each resolution includes video streamlets, such as: “seg-1-f[X]-v1-a1.ts,” “seg-2-f[X]-v1-a1.ts,” “seg-3-f[X]-v1-a1.ts,” “seg-4-f[X]-v1-a1.ts,” and “seg-5-f[X]-v1-a1.ts,” where [X] corresponds to a unique identifier for each bandwidth version. Within each bandwidth playlist file, there are the 559 .ts files, each corresponding to the same segmented moments in the video.</p> <table border="1"> <thead> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (<u>portion of live stream</u>)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-a1.ts</u>?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2-f1-v1-a1.ts</u>?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3-f1-v1-a1.ts</u>?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D </td></tr> </tbody> </table>	Bandwidth Version	File line (#EXTINF: length) (<u>portion of live stream</u>)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-a1.ts</u> ?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2-f1-v1-a1.ts</u> ?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3-f1-v1-a1.ts</u> ?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D
Bandwidth Version	File line (#EXTINF: length) (<u>portion of live stream</u>)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-a1.ts</u> ?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2-f1-v1-a1.ts</u> ?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3-f1-v1-a1.ts</u> ?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D				

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Claim Element	Example Infringement Evidence
	<p>#EXTINF:4.000, <u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-5-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000, <u>seg-556-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-557-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-558-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p>

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Claim Element	Example Infringement Evidence	
		<u>seg-559-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXT-X-ENDLIST
	3023543 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D #EXTINF:4.000,

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Claim Element	Example Infringement Evidence
	<p><u>seg-4-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-557-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-558-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616,</p> <p><u>seg-559-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<div> <div></div> <div>#EXT-X-ENDLIST</div> </div> <p>On information and belief, the other bandwidth file playlists also comprise 559 streamlets, each corresponding to the same portion of video as is respective counterpart in the streamlet files shown above.</p> <p>The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are “in relation to the beginning of the video.” For example, HLS requires that “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6; <i>see also</i> RFC 8216 at 45 (“A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments.”).</p> <p>Indeed, to adapt playback between different bitrate Variant Streams, the end user station accessing the Brazzers Premium Site “can use the EXTINF durations and the constraints in Section 6.2.4 to determine the approximate location of corresponding media. Once media from the new Variant Stream has been loaded, the timestamps in the Media Segments can be used to synchronize the old and new timelines precisely.” RFC 8216 at 47.</p>
[1.7] automatically requesting by the media player from the set of servers over the plurality of TCP connections subsequent portions of the video by	<p>As explained above, the video segments are requested and received over a plurality of TCP connections. Also explained above, the streamlets are presented in sequential ascending chronological order, based upon the previously requested and/or fulfilled streamlet, defined by time index relevant to the beginning of the program. The requests are transmitted automatically, without the need for user-inputted request for the sequential streamlets.</p> <p>Each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to streamlet encoding the same portion of the video in the high quality stream; allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on</p>

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requesting for each such portion one of the files from one of the copies dependent upon successive determinations by the media player to shift the playback quality to a higher or lower quality one of the different copies, said automatically requesting including,	<p>playback. RFC 8216 at 43. Further, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user station uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The first streamlet of each of the variant playlists used to stream the video titled “All Dolled Up—Try Me” are the same duration (3.000 seconds) and encode the same portion of the video. The video streamlet files are hosted at stream-private-ht.project1content.com. This is illustrated below:</p> <table border="1"> <thead> <tr> <th>Bandwidth Version</th><th>File line (#EXTINF: length) (same portion of live stream)</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td> #EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, </td></tr> </tbody> </table>	Bandwidth Version	File line (#EXTINF: length) (same portion of live stream)	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,
Bandwidth Version	File line (#EXTINF: length) (same portion of live stream)				
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000,				

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	<p><u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: right;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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		<p>#EXTINF:4.000, <u>seg-557-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-558-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616, <u>seg-559-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000, <u>seg-1-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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	<p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p style="text-align: right;">[***]</p> <p>#EXTINF:4.000,</p> <p><u>seg-556</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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	<div><div><div>seg-557-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</div><div>#EXTINF:4.000,</div><div>seg-558-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</div><div>#EXTINF:0.616,</div><div>seg-559-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</div><div>#EXT-X-ENDLIST</div></div></div>														
	<p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p>														
	<p>For the instant test, the end user station initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p>														
	<table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete				
Method	Host	Path	...	Status											
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete											

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	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
	<p>The Brazzers “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player embedded in the web page of the Brazzers Premium Site, “[t]he client,” which is the end user station accessing the Brazzers Premium Site, “SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to playback normally, the end user station must request a plurality of files with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p> <p>As shown above, although the end user station initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted.</p> <p>On information and belief, playlists for the other resolution variants also include these segments, which correspond to the same portion of the video provided on-demand from the Brazzers’s server(s).</p>				
[1.8] repeatedly generating a set of one or more factors indicative	The media player embedded in the web page of the Brazzers Premium Site of Brazzers Premium Site receives a streamlet request from the end user station and subsequently places a request to the video servers over the one or more network connections for the selected stream.				

U.S. Patent No. 8,868,772 to Brazzers

Claim Element	Example Infringement Evidence																									
of the current ability to sustain the streaming of the video using the files from different ones of the copies,	<p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table> <p>The Brazzers “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player, “[t]he client,” which is the media player embedded on the web page of the Brazzers Premium Site, “SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to</p>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete																						
GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete																						

U.S. Patent No. 8,868,772 to Brazzers

Claim Element	Example Infringement Evidence															
	<p>playback normally, the end user station must request a plurality of files with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p> <p>As shown above, although the end user station initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted.</p>															
[1.9] wherein the set of one or more factors relate to the performance of the network; and	<p>The end user station receives the requested streamlets via one or more network connections in accordance with the determinations made based upon available bandwidth.</p> <p>In response to requesting the first streamlet via an HTTP GET request, as shown above, the end user station receives the requested streamlet from the server via the one or more network connections. <i>See e.g.</i>, RFC 8216 at 4 (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”); <i>id.</i> at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”).</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status												
GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete												
GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete												

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Claim Element	Example Infringement Evidence															
	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete											
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete											
[1.10] making the successive determinations to shift the playback quality based on at least one of the set of factors to achieve continuous playback of the video using the files of the highest quality one of the copies determined sustainable at the time; and	<p>As explained above, end user station receives the requested streamlets via one or more network connections in accordance with the determinations made based upon available bandwidth. This includes upshifting in resolution when the available bandwidth can support a higher resolution of the video <i>and</i> downshifting when the available bandwidth can no longer support the then-displayed resolution of the video.</p> <p>In response to requesting the first streamlet via an HTTP GET request, as shown above, the end user station receives the requested streamlet from the server via the one or more network connections. <i>See e.g.</i>, RFC 8216 at 4 (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”); <i>id.</i> at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”).</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests:</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-43-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>						Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-43-f1-v1-a1.ts?...	...	Complete
Method	Host	Path	...	Status												
GET	stream-private-ht.project1content.com	.../hls/.../seg-43-f1-v1-a1.ts?...	...	Complete												

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Claim Element	Example Infringement Evidence					
	GET	stream-private-ht.project1content.com	.../hls/.../seg-44-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-45-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-46-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-47-f1-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-48-f3-v1-a1.ts?...	...	Complete	
	GET	stream-private-ht.project1content.com	.../hls/.../seg-49-f3-v1-a1.ts?...	...	Complete	
[1.11] presenting the video by playing back with the media player on the end user station the requested files in order of ascending playback time..	The media player embedded in the web page of the Brazzers Premium Site provides the streamlets of the video program to the end user device over a network connection in order of ascending playback time. Brazzers confirms that the media player it embeds in the web pages of the Brazzers Premium Site to end user stations over a network connection on the Brazzers support webpage, https://www.support.brazzers.com . There, Brazzers troubleshoots problems end users may have with HLS and instructs users on how to optimize their video playback experience. See https://www.support.brazzers.com/technical .					

U.S. Patent No. 8,868,772 to Brazzers

Claim Element	Example Infringement Evidence
	 <p>The screenshot shows the support.brazzers.com/technical/ website. On the left, there are three contact options: TOLL-FREE (7 DAYS A WEEK, Live agents available 8:00AM - 4:00PM EST, Support agents are currently available), UNITED STATES (+1-877-237-4215, OTHER COUNTRIES AND NUMBERS), and CHAT (Chat live with one of our support specialists, Live agents available 8:00AM - 4:00PM EST, Support agents are currently available, START CHAT button). On the right, there is a section titled "What do I do if my video playback is choppy?" with a list of six troubleshooting steps: 1. Select a lower video quality, 2. For reliable streaming we recommend selecting the RTMP method, 3. Turn off other programs, virus protection, ad blocker, or energy saving settings, 4. Stop any files that you may be downloading in the background, 5. Try closing other browser tabs if you have many opened, 6. Try another browser and see if that helps. We recommend the latest versions of the following browsers: Google Chrome, Firefox.</p>

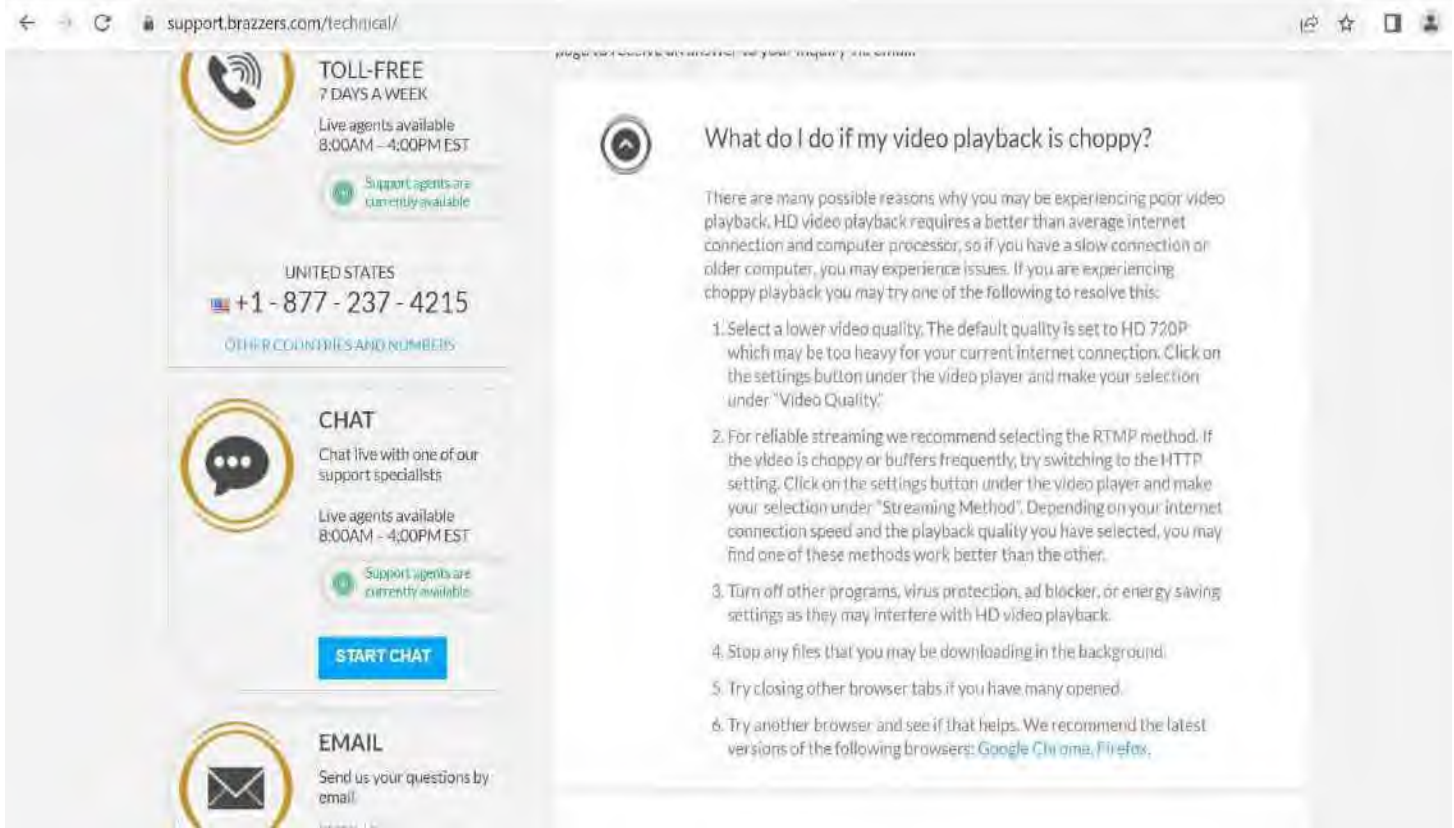
EXHIBIT BBB

U.S. Patent No. 11,470,138 to Brazzers

The following claim chart shows exemplary aspects of certain streaming services and products provided by MG Premium Ltd or any other Defendants, using the Brazzers premium website, available at www.brazzers.com (“Brazzers Premium Site”), that infringe claim 14 of the ’138 Patent. The chart is exemplary and should not be read to limit DISH’s assertions against MG Premium Ltd., Brazzers, or any other streaming services offered by MG Premium Ltd or other Defendants as to the services or products described below. The chart should not be read to limit DISH’s assertions to the patent claim charted below. Nor should the chart below be read to limit how MG Premium Ltd and/or other Defendants infringe the claim below.

Claim Element	Example Infringement Evidence
[14.pre] An end user station to stream a video over a network from a server for playback of the video, the end user station comprising:	<p>The Brazzers Premium Site provides information that permits an end user device to stream a video over a network from a server for playback of the video. The streams include live streams that are obtained from one or more servers affiliated with the Brazzers Premium Site over a network.</p> <p>The images in this chart are from the Brazzers Premium Site through a web browser, such as Microsoft Edge, Google Chrome, or iOS Safari. In addition, the media player embedded in the web page of, and executed based on instructions given by, the Brazzers Premium Site is available to run on content player devices supporting all the latest versions of major web browsers. <i>See</i> https://www.support.brazzers.com/technical/ (“[Brazzers] support[s] all the latest versions of major web browsers....”). <i>See also id.</i> (showing, in part, that an internet connection is required in order to stream videos):</p>

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Claim Element	Example Infringement Evidence
	 <p>The screenshot shows the support page for Brazzers. On the left, there are three contact options: TOLL-FREE (7 DAYS A WEEK, 8:00AM - 4:00PM EST), CHAT (Live agents available 8:00AM - 4:00PM EST), and EMAIL (Send us your questions by email). On the right, there is a section titled 'What do I do if my video playback is choppy?' which lists six steps to resolve the issue: 1. Select a lower video quality, 2. For reliable streaming we recommend selecting the RTMP method, 3. Turn off other programs, virus protection, ad blocker, or energy saving settings, 4. Stop any files that you may be downloading in the background, 5. Try closing other browser tabs if you have many opened, and 6. Try another browser and see if that helps.</p> <p>https://www.support.brazzers.com/technical/</p> <p>Tests were conducted on videos offered over the Brazzers Premium Site accessed on a personal computer. As part of the testing, the device accessing Brazzers Premium Site was connected to the internet through the Charles Proxy application, which enabled the ability to proxy the device's network traffic, to view the device's network traffic, and to throttle the network's available bandwidth. Thus, the test simulated how Brazzers responded to lower and higher bandwidths. For the current test, a video titled "All Dolled Up – Try Me" was selected, and at various times throughout the playback of the video, bandwidth was restricted to download speeds of 2048 kbps.</p>

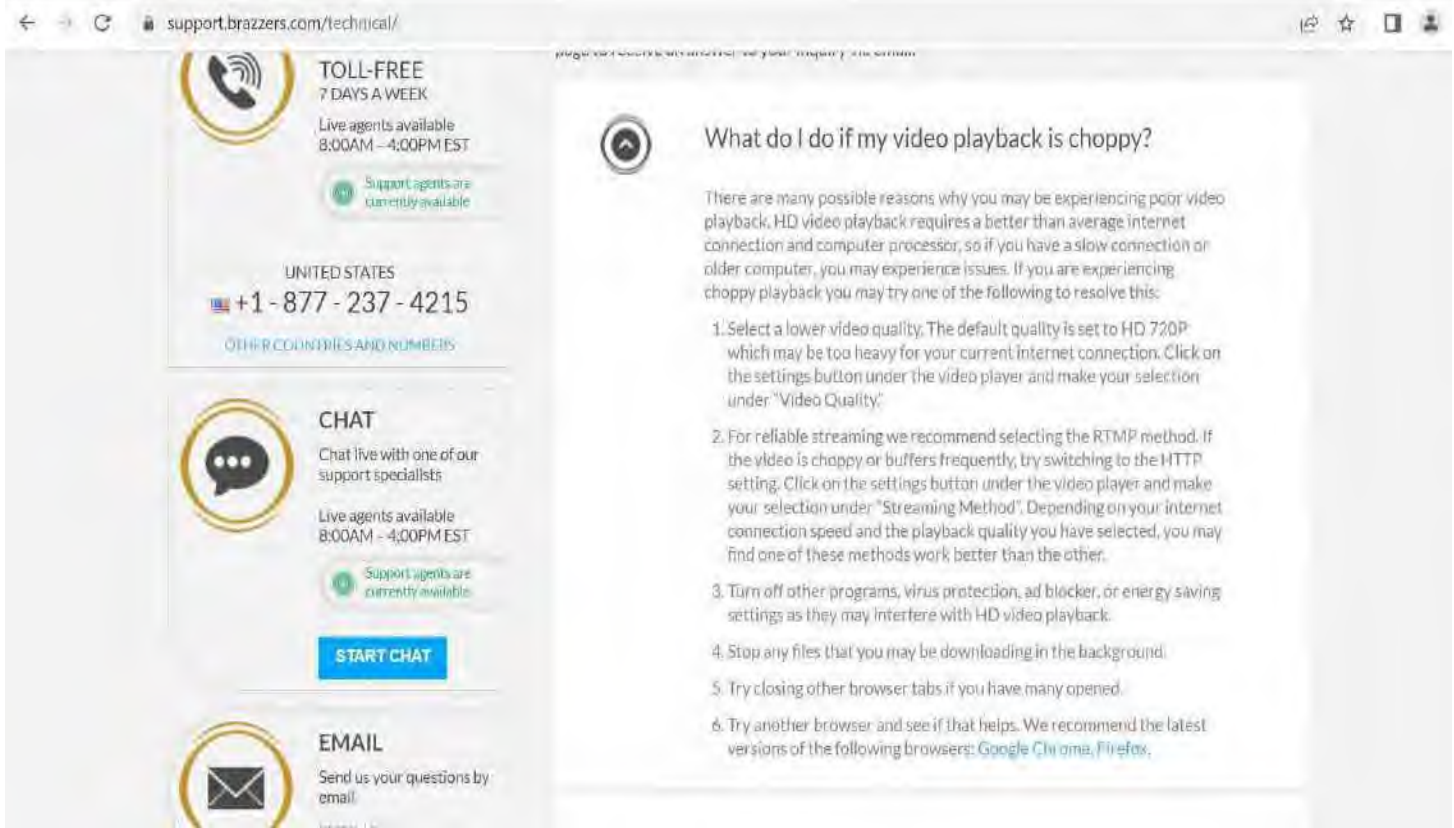
U.S. Patent No. 11,470,138 to Brazzers

Claim Element	Example Infringement Evidence
	<p>As observed through the tests, when the user selects a video from the available videos, the media player embedded in the web page of the Brazzers Premium Site displays more details regarding the video and provides the user with the option to view the video.</p> <p>Selecting the icon corresponding to a video causes that video and other materials to be streamed and displayed on the user's device.</p> <p>With respect to adaptively receiving the digital stream from the video server over the network, the media player embedded in the web page of the Brazzers Premium Site accesses adaptive bitrate streams from a server affiliated with the Brazzers Premium Site over a network using the HTTP Live Streaming ("HLS") adaptive bitrate streaming protocol. HLS is "a protocol for transferring unbounded streams of multimedia data." Request For Comments: 8216 – HTTP Live Streaming, August 2017 ("RFC 8216") at 1. Using HLS, "a client can receive a continuous stream of media from a server for concurrent presentation." RFC 8216 at 4. HLS "allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality." RFC 8216 at 4. With HLS, "[c]lients should switch between different Variant Streams to adapt to network conditions." RFC 8216 at 5.</p> <p>As explained in further detail below, the Brazzers Premium Site provides an end user station to stream a video over a network from a server for playback of the video.</p>
[14.1] a processor;	<p>Brazzers's content is accessible on end users' devices. Example end user devices include personal computers, Macintosh computers, Apple iPhones, Apple iPads, Android phones, Android tablets, and smart TV devices equipped to access the internet via one or more network connections. The end users' devices include a processor configured to enable video streaming.</p> <p>The screenshots in this chart of the Brazzers Premium Site are from accessing the Brazzers Premium Site on an Apple iPhone or Windows computer. On information and belief, at least one of the devices capable of accessing and viewing Brazzers content contains a processor.</p>
[14.2] a digital processing apparatus memory	<p>As explained above, the Brazzers Premium Site runs on end users' devices. Example end user devices include personal computers, Macintosh computers, Apple iPhones, Apple iPads, Android phones, Android tablets, and smart TV devices equipped to access the internet via one or more network connections. The end users' devices</p>

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Claim Element	Example Infringement Evidence
<p>device comprising non-transitory machine-readable instructions that, when executed, cause the processor to: establish an internet connection between the end user station and the server, wherein the server is configured to access at least one of a plurality of groups of streamlets;</p>	<p>include a processor configured to enable video streaming. The end users' devices also include memory devices having non-transitory machine-readable instructions that cause an end user device to establish one or more internet connections between the end user station and the one or more Brazzers servers hosting Brazzers videos.</p> <p>Through the established network connection, the devices streaming Brazzers access video programs that are stored on one or more servers for display on the devices via the media player embedded in the web page of the Brazzers Premium Site. <i>See also</i> https://www.support.brazzers.com/technical/ (“[Brazzers] support[s] all the latest versions of major web browsers....”). <i>See also id.</i> (showing, in part, that an internet connection is required in order to stream videos):</p>

U.S. Patent No. 11,470,138 to Brazzers

Claim Element	Example Infringement Evidence
	 <p>The screenshot shows the support.brazzers.com/technical/ webpage. On the left, there are three contact options: TOLL-FREE (7 DAYS A WEEK, 8:00AM - 4:00PM EST), CHAT (Live agents available 8:00AM - 4:00PM EST), and EMAIL (Send us your questions by email). On the right, there is a section titled 'What do I do if my video playback is choppy?' with a list of six troubleshooting steps: 1. Select a lower video quality, 2. For reliable streaming we recommend selecting the RTMP method, 3. Turn off other programs, virus protection, ad blocker, or energy saving settings, 4. Stop any files that you may be downloading in the background, 5. Try closing other browser tabs if you have many opened, and 6. Try another browser and see if that helps.</p> <p>https://www.support.brazzers.com/technical/</p> <p>The one or more servers hosting Brazzers' video programs store streamlets corresponding to particular segments of a video program, and each streamlet is encoded at one of numerous resolutions. Each of the stored streams, or variant playlists, comprises a plurality of streamlets at the same resolution. The arrangements of each variant playlist ensure the sequential playback of the streams at a resolution supported by the available network bandwidth.</p>

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Claim Element	Example Infringement Evidence
	<p>For example, in the instant test of a video titled “All Dolled Up—Try Me,” the end user station: established a network connection, connected with the one or more Brazzers servers, and made an HTTP GET request to stream-private-hl.project1content.com for a master manifest located at the following path: /hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene_320p_480p_720p_1080p_2160p.mp4.urls et/master.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D (hereafter referred to as the “Master Manifest” or “master.m3u8”). The Master Manifest returned the following contents, reflecting the Uniform Resource Indicators (“URIs”) of the various variant playlists hosting at least a group of streamlets:</p> <pre>#EXTM3U #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME- RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</pre>

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Claim Element	Example Infringement Evidence				
	<p>index-f4-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p> <p>index-f5-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each variant playlist, or version playlist, is defined by the token associated with the stream file path. For example:</p> <table border="1"> <thead> <tr> <th>Bandwidth</th><th>Token¹</th></tr> </thead> <tbody> <tr> <td>915420 Bandwidth</td><td>index-f1-v1-a1.m3u8?...</td></tr> </tbody> </table>	Bandwidth	Token ¹	915420 Bandwidth	index-f1-v1-a1.m3u8?...
Bandwidth	Token ¹				
915420 Bandwidth	index-f1-v1-a1.m3u8?...				

¹ Token abbreviated for readability. The abbreviated portions of each token are the same across all bandwidth versions.

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Claim Element	Example Infringement Evidence	
	1654630 Bandwidth	index-f2-v1-a1.m3u8?...
	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
	<p>Each of the variant playlists includes segments, or streamlets, that encode the same portion of the video at various resolutions. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>An end user station accessing the Brazzers Premium Site through a web browser uses HTTPS GET requests to retrieve the segments, or streamlets, of the encoded video specified in the file above from the one or more servers hosting Brazzers content.</p> <p>The Media Playlist for each of the Variant Streams identifies a group of streamlets associated with each of the different copies, as the exemplary Media Playlist shown below illustrates. <i>See</i> RFC 8216 at 38 (“The server must create a Media Playlist file (Section 4) that contains a URI for each Media Segment that the server wishes to make available, in the order in which they are to be played.”); <i>see also</i> RFC 8216 at 4 (“A multimedia presentation is specified by a Uniform Resource Identifier (URI) [RFC3986] to a Playlist.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation. A Media Segment is specified by a URI and optionally a byte range.”).</p>	

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Claim Element	Example Infringement Evidence				
	As shown by the Charles Proxy application file, partially reproduced below, the streamlet video files are hosted on a server accessible via stream-private-ht.project1content.com .				
	Method	Host	Path ²	...	Status
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-70-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-71-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-72-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	/hls/b16/7ee/fd6/36a/456/6ae/85c/893/013/78d/	...	Complete

² Video path abbreviated for readability throughout.

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Claim Element	Example Infringement Evidence					
			99/video/scene,_320p,_480p,_720p,_1080p,_2160p,.mp4.urlset/seg-73-f3-v1-a1.ts?...			
	<p>On information and belief, other videos offered to Brazzers viewers are similarly encoded at multiple resolutions, hosted on one or more servers, and accessed through HTTP Get Requests by end users' devices. similarly perform the demonstrated claim limitations.</p> <p>As shown in the test data, Brazzers selects the 3023543 Bandwidth version of the stream and makes a request for the corresponding playlist. The Brazzers's server(s) returns the playlist file with the following contents:</p> <div style="border: 1px solid black; padding: 10px;"> <pre>#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, seg-1-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,</pre> </div>					

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Claim Element	Example Infringement Evidence
	<p>seg-2-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-3-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-4-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-5-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000,</p> <p>seg-556-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p>seg-557-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p>

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Claim Element	Example Infringement Evidence
	<div style="border: 1px solid black; padding: 10px;"> <pre>#EXTINF:4.000, seg-558-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:0.616, seg-559-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXT-X-ENDLIST</pre> </div> <p>The variant playlist file is a HLS playlist. Each line in the file path “index-f3-v1-a1.m3u8?...” that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the variant playlist shown above, the segments of the video are separated by commercial segments. Each of the streamlets (except the first and final streamlets of each playlist) is 4.000 seconds long and returns sequential segments of the video program and/or commercial.</p> <p>As long as the viewer continues watching the video and the bandwidth is adequate to support the chosen resolution, the end user device will continue to request (and Brazzers will provide) streamlets corresponding to the current, chosen resolution.</p> <p>Thus, Brazzers provides a digital processing apparatus memory device comprising non-transitory machine-readable instructions that, when executed, cause the end user station’s processor to: establish an internet connection between the end user station and the server, wherein the server is configured to access at least one of a plurality of groups of streamlets.</p>
[14.3] wherein the video is encoded at a plurality of	As mentioned above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different

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Claim Element	Example Infringement Evidence
different bitrates to create a plurality of streams including at least a low quality stream, a medium quality stream, and a high quality stream, each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets encoded at the same respective one of the different bitrates, each group comprising at least first and second streamlets, each of the streamlets corresponding to a portion of the video;	<p>bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate.</p> <p>In the instant test, a personal computer accessing the Brazzers Premium Site through a web browser makes a HTTPS GET request to stream-private-hl.project1content.com for the Master Manifest. As shown in the excerpts of the Master Manifest below, the video available is encoded at 5 different bitrates.</p> <div style="border: 1px solid black; padding: 10px;"> <pre>#EXTM3U #EXT-X-STREAM-INF:PROGRAM- ID=1,BANDWIDTH=915420,RESOLUTION=568x320,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f1-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3 Zs4%3D #EXT-X-STREAM-INF:PROGRAM- ID=1,BANDWIDTH=1654630,RESOLUTION=854x480,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f2-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3 Zs4%3D #EXT-X-STREAM-INF:PROGRAM- ID=1,BANDWIDTH=3023543,RESOLUTION=1280x720,FRAME- RATE=23.974,CODECS="avc1.64001f,mp4a.40.2" index-f3-v1- a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3 Zs4%3D</pre> </div>

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Claim Element	Example Infringement Evidence
	<div style="border: 1px solid black; padding: 10px;"> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=4816531,RESOLUTION=1920x1080,FRAME-RATE=23.974,CODECS="avc1.640032,mp4a.40.2"</p> <p>index-f4-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXT-X-STREAM-INF:PROGRAM-ID=1,BANDWIDTH=6660563,RESOLUTION=3840x2160,FRAME-RATE=23.974,CODECS="avc1.640033,mp4a.40.2"</p> <p>index-f5-v1-a1.m3u8?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <p>File path: master.m3u8</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260 <p>For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:</p>

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Claim Element	Example Infringement Evidence	
	Bandwidth	Token
	915420 Bandwidth	index-f1-v1-a1.m3u8?...
	1654630 Bandwidth	index-f2-v1-a1.m3u8?...
	3023543 Bandwidth	index-f3-v1-a1.m3u8?...
	4816531 Bandwidth	index-f4-v1-a1.m3u8?...
	6660563 Bandwidth	index-f5-v1-a1.m3u8?...
	<p>Each of the bandwidth streams includes segments that encode the same portion of the video at various qualities. For example, the 915420 Bandwidth version can be considered a low-quality stream, the 1654640 Bandwidth version can be considered a medium-quality stream, and the 3023543 Bandwidth version can be considered a high-quality stream.</p> <p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program.</p>	
Bandwidth	Streamlet (<u>segment</u>)	
915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4	

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence	
		<u>seg-5</u> -f1-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D
	3023543 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1</u> -f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2</u> -f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3</u> -f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000,

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Claim Element	Example Infringement Evidence
	<div> <p><u>seg-4</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-5</u>-f3-v1-a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <p>On information and belief, playlists for the other resolution variants also include these segments, or streamlets, also arranged in ascending chronological order and corresponding to the same portion of the video provided from Brazzers's server(s). Also on information and belief, other videos streamed using Brazzers and the media player embedded in the web page of the Brazzers Premium Site (such as live videos) provide the same limitations.</p> <p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams "describes a different version of the same content." RFC 8216 at 5. Thus, each of the Variant Streams are "encodings of the same presentation" at different bitrates. RFC 8216 at 42. Indeed, to allow "clients to switch between" Variant Streams seamlessly, HLS requires that "[e]ach Variant Stream MUST present the same content" on playback. RFC 8216 at 43. And, HLS provides that "[m]atching content in Variant Streams MUST have matching timestamps" to allow the media player embedded in the web page of the Brazzers Premium Site to synchronize the media. <i>Id.</i> Further, "[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions." RFC 8216 at 39. Thus, "[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers." RFC 8216 at 43.</p> <p>The video server stores the video wherein "each of the low quality stream, the medium quality stream, and the high quality stream comprising a group of streamlets." The HLS protocol indicates that "[a] Media Playlist contains a list of Media Segments, which, when played sequentially, will play the multimedia presentation."</p>

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Claim Element	Example Infringement Evidence
	<p>RFC 8216 at 4; <i>see also</i> RFC 8216 at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”); RFC 8216 at 4 (“A Media Playlist contains a series of Media Segments that make up the overall presentation.”).</p> <p>Each of the Media Segments in HLS yields a different portion of the video on playback. For example, HLS provides that “[e]ach segment in a Media Playlist has a unique integer Media Sequence Number. The Media Sequence Number of the first segment in the Media Playlist is either 0 or declared in the Playlist (Section 4.3.3.2). The Media Sequence Number of every other segment is equal to the Media Sequence Number of the segment that precedes it plus one.” RFC 8216 at 6. As such, “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6. Thus, each of the streamlets in a set must yield a different portion of the video on playback.</p> <p>The streamlets across the different copies yield the same portions of the video on playback. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43.</p>
[14.4] wherein at least one of the low quality stream, the medium quality stream, and the high quality stream is encoded at a bitrate of no less than 600 kbps; and	<p>As explained above, Brazzers videos are encoded at a plurality of different bitrates to create a plurality of streams including at least low, medium, and high quality streams. Each of the low, medium, and high quality streams has a streamlet that encodes the same portion of the video at a different one of the plurality of different bitrates. Each of the streamlets comprising the low, medium, and high, quality streams are stored in variant playlists comprising a group of streamlets of the same quality at a respective bit rate. At least one of the low quality stream, the medium quality stream, and the high quality stream is encoded at a bitrate of no less than 600 kbps.</p> <p>The master playlist shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480

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Claim Element	Example Infringement Evidence
	<ul style="list-style-type: none"> • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260
<p>[14.5] wherein the first streamlets of each of the low quality stream, the medium quality stream and the high quality stream each has an equal playback duration and each of the first streamlets encodes the same portion of the video at a different one of the different bitrates;</p>	<p>Each of the low-quality stream, medium-quality stream, and high-quality stream comprise a group of streamlets that are encoded at the same respective one of the different bitrates. As set forth above, each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. And, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow the media player to synchronize the media. <i>Id.</i> Further, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>As shown below, each of the 915420 Bandwidth and 3023543 Bandwidth version playlists contain segments, or streamlets, that encode segments of the video program. The streamlet files within each version playlist are arranged in ascending chronological order, beginning with the first segment of the video program and progressing until the final segment of the video program. As noted above, the variant playlist file is an HLS playlist. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user device accessing Brazzers Premium Site uses HTTPS GET requests to request and retrieve the segments of the encoded stream specified in the file above. The video files are hosted at stream-private-ht.project1content.com, and each streamlet (except the first and final streamlets) is 4.000 seconds long. The first streamlet of each of the 915420 Bandwidth and the 3023543 Bandwidth is 3.000 seconds long.</p> <p>The received playlists at each resolution includes video streamlets, such as: “seg-1-f[X]-v1-a1.ts,” “seg-2-f[X]-v1-a1.ts,” “seg-3-f[X]-v1-a1.ts,” “seg-4-f[X]-v1-a1.ts,” and “seg-5-f[X]-v1-a1.ts,” where [X] corresponds to a unique identifier for each bandwidth version. Within each bandwidth playlist file, there are the 559 .ts files, each corresponding to the same segmented moments in the video.</p>

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Claim Element	Example Infringement Evidence	
	Bandwidth Version	File line (#EXTINF: length) (<u>portion of live stream</u>)
	915420 Bandwidth	#EXTM3U #EXT-X-TARGETDURATION:4 #EXT-X-ALLOW-CACHE:YES #EXT-X-PLAYLIST-TYPE:VOD #EXT-X-VERSION:3 #EXT-X-MEDIA-SEQUENCE:1 #EXTINF:3.000, <u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D #EXTINF:4.000, <u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D

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Claim Element	Example Infringement Evidence	
		<p>#EXTINF:4.000, <u>seg-5-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p style="text-align: center;">[***]</p> <p>#EXTINF:4.000, <u>seg-556-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-557-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000, <u>seg-558-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:0.616, <u>seg-559-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXT-X-ENDLIST</p>
	3023543 Bandwidth	#EXTM3U

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4</u>-f3-v1- a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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Claim Element	Example Infringement Evidence
	<div> <p><u>seg-5-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <div>[***]</div> <div> <p>#EXTINF:4.000,</p> </div> <div> <p><u>seg-556-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <div> <p>#EXTINF:4.000,</p> </div> <div> <p><u>seg-557-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <div> <p>#EXTINF:4.000,</p> </div> <div> <p><u>seg-558-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <div> <p>#EXTINF:0.616,</p> </div> <div> <p><u>seg-559-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> </div> <div> <p>#EXT-X-ENDLIST</p> </div> <div> <p>On information and belief, the other bandwidth file playlists also comprise 559 streamlets, each corresponding to the same portion of video as is respective counterpart in the streamlet files shown above. Similarly, on</p> </div>

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	<p>information and belief, the other bandwidth version streamlets are the same durations as the 915420 Bandwidth and 3023543 Bandwidth versions.</p> <p>The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are “in relation to the beginning of the video.” For example, HLS requires that “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6; <i>see also</i> RFC 8216 at 45 (“A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments.”).</p>
<p>[14.6] select a specific one of the low quality stream, the medium quality stream, and the high quality stream based upon a determination by the end user station to select a higher or lower bitrate version of the streams;</p>	<p>As explained above, the end user device requests segments, or streamlets, from the one or more servers to display Brazzers content on an end user device. The video segments are presented in sequential ascending chronological order, based upon the previously requested and/or fulfilled streamlet, defined by the end user station running the Brazzers Premium Site.</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>As explained above, the master playlist for the instant test video—“All Dolled Up, Try Me”—shows five versions of the video stream at the following bandwidths:</p> <ul style="list-style-type: none"> • 915420 (referred to herein as “915420 Bandwidth”) having a resolution of 568x320 • 1654630 (referred to herein as “1654630 Bandwidth”) having a resolution of 854x480 • 3023543 (referred to herein as “3023543 Bandwidth”) having a resolution of 1280x720 • 4816531 (referred to herein as “4816531 Bandwidth”) having a resolution of 1920x1080 • 6660563 (referred to herein as “6660563 Bandwidth”) having a resolution of 3840x1260

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	For each of these versions, the master playlist provides a link to a playlist for the specified version of the selected video program at a particular bandwidth and resolution. Each version playlist is defined by the token associated with the stream file path. For example:				
	Bandwidth		Token		
	915420 Bandwidth		index-f1-v1-a1.m3u8?...		
	1654630 Bandwidth		index-f2-v1-a1.m3u8?...		
	3023543 Bandwidth		index-f3-v1-a1.m3u8?...		
	4816531 Bandwidth		index-f4-v1-a1.m3u8?...		
	6660563 Bandwidth		index-f5-v1-a1.m3u8?...		
	The end user device accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon a determination that the higher bitrate can be supported, the end user station switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.				
	Method	Host	Path	...	Status
	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete

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	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete		
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete		
	<p>Additionally, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow Brazzers to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p>						
[14.7] place a streamlet request to the server over the internet connection for the first streamlet of the selected stream;	<p>As explained above, Brazzers presents the end user station with the sequential video streamlets after HTTPS get requests are fulfilled by the one or more Brazzers servers. The requests are transmitted automatically, without the need for repeated user input requesting the sequential streamlets.</p> <p>The variant playlists file are HLS playlists. Each line in the file that begins with “#EXTINF” specifies the length of the segments in seconds. The line below the #EXTINF file is the location of the video file. In the present test, the end user device accessing the Brazzers Premium Site requests and retrieves the segments of the encoded stream specified in the file above. The video files are hosted at stream-private-ht.project1content.com, and each streamlet (except the first and final streamlets) is 4.000 seconds long.</p> <p>The received playlists at each resolution includes video streamlets, such as: “seg-1-f[X]-v1-a1.ts,” “seg-2-f[X]-v1-a1.ts,” “seg-3-f[X] -v1-a1.ts,” “seg-4-f[X]-v1-a1.ts,” and “seg-5-f[X]-v1-a1.ts,” where [X] corresponds to a unique identifier for each bandwidth version. Within each bandwidth playlist file, there are the 559 .ts files, each corresponding to the same segmented moments in the video.</p> <table><tr><th>Bandwidth Version</th><th>File line (#EXTINF: length) (portion of live stream)</th></tr></table>					Bandwidth Version	File line (#EXTINF: length) (portion of live stream)
Bandwidth Version	File line (#EXTINF: length) (portion of live stream)						

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Claim Element	Example Infringement Evidence	
	915420 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p> <p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f1-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JKFSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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	3023543 Bandwidth	<p>#EXTM3U</p> <p>#EXT-X-TARGETDURATION:4</p>

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Claim Element	Example Infringement Evidence
	<p>#EXT-X-ALLOW-CACHE:YES</p> <p>#EXT-X-PLAYLIST-TYPE:VOD</p> <p>#EXT-X-VERSION:3</p> <p>#EXT-X-MEDIA-SEQUENCE:1</p> <p>#EXTINF:3.000,</p> <p><u>seg-1-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-2-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-3-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p> <p><u>seg-4-f3-v1-</u> a1.ts?validto=1691016383&ip=108.223.180.169&hash=v70AOyHrYt%2FsO7JK FSmRbzI3Zs4%3D</p> <p>#EXTINF:4.000,</p>

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	<p>The matching timestamps and Discontinuity Sequence Numbers for matching content across the Variant Streams are “in relation to the beginning of the video.” For example, HLS requires that “[e]ach Media Segment MUST carry the continuation of the encoded bitstream from the end of the segment with the previous Media Sequence Number, where values in a series such as timestamps and Continuity Counters MUST continue uninterrupted.” RFC 8216 at 6; <i>see also</i> RFC 8216 at 45 (“A client MUST NOT assume that segments with the same Media Sequence Number in different Variant Streams or Renditions have the same position in the presentation; Playlists MAY have independent Media Sequence Numbers. Instead, a client MUST use the relative position of each segment on the Playlist timeline and its Discontinuity Sequence Number to locate corresponding segments.”).</p> <p>Indeed, to adapt playback between different bitrate Variant Streams, the end user station “can use the EXTINF durations and the constraints in Section 6.2.4 to determine the approximate location of corresponding media. Once media from the new Variant Stream has been loaded, the timestamps in the Media Segments can be used to synchronize the old and new timelines precisely.” RFC 8216 at 47.</p> <p>Each of the Variant Streams “describes a different version of the same content.” RFC 8216 at 5. Thus, each of the Variant Streams are “encodings of the same presentation” at different bitrates. RFC 8216 at 42. Indeed, to streamlet encoding the same portion of the video in the high quality stream; allow “clients to switch between” Variant Streams seamlessly, HLS requires that “[e]ach Variant Stream MUST present the same content” on playback. RFC 8216 at 43. Further, HLS provides that “[m]atching content in Variant Streams MUST have matching timestamps” to allow Brazzers to synchronize the media. RFC 8216 at 43. And, “[e]ach Media Segment in a Media Playlist has an integer Discontinuity Sequence Number. The Discontinuity Sequence Number can be used in addition to the timestamps within the media to synchronize Media Segments across different Renditions.” RFC 8216 at 39. Thus, “[m]atching content in Variant Streams MUST have matching Discontinuity Sequence Numbers.” RFC 8216 at 43.</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p>

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	<p>For the instant test, the end user station initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table> <p>The Brazzers “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player embedded in the web page of the Brazzers Premium Site, “[t]he client SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to playback normally, the end user station must request a plurality of Brazzers files with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
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	<p>As shown above, although the end user station initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted.</p> <p>On information and belief, playlists for the other resolution variants also include these segments, which correspond to the same portion of the video provided from Brazzers’s server(s).</p>																									
[14.8] receive the requested first streamlet from the server via the internet connection; and	<p>The end user station accessing the Brazzers Premium Site places a request to Brazzers’s server(s) over the internet connection for the selected stream and receives the requested streamlet from Brazzers’s server(s) via the established internet connection between the end user station and the server(s).</p> <p>HLS “allows a receiver to adapt the bitrate of the media to the current network conditions in order to maintain uninterrupted playback at the best possible quality.” RFC 8216 at 4; <i>see also id.</i> (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”).</p> <p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p> <table><tr><th>Method</th><th>Host</th><th>Path</th><th>...</th><th>Status</th></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-1-f1-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-2-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-3-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr><tr><td>GET</td><td>stream-private-ht.project1content.com</td><td>.../hls/.../seg-4-f3-v1-a1.ts?...</td><td>...</td><td>Complete</td></tr></table>	Method	Host	Path	...	Status	GET	stream-private-ht.project1content.com	.../hls/.../seg-1-f1-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-2-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
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	<p>Brazzers “[p]laylist files contain URIs, which clients will use to make network requests of arbitrary entities.” RFC 8216 at 55. When playback starts on the media player, “[t]he client,” which is the media player, “SHALL choose which Media Segment to play first from the Media Playlist.” RFC 8216 at 45; <i>id.</i> at 47 (“The first segment to load is generally the segment that the client has chosen to play first (see Section 6.3.3).”). Then, “[i]n order to play the presentation normally, the next Media Segment” the end user station requests and “load[s] the one with the lowest Media Sequence Number that is greater than the Media Sequence Number of the last Media Segment loaded.” RFC 8216 at 47. That is, to playback normally, the end user station must request a plurality of files with sequential Media Sequence Numbers/timestamps and the requests are made based on the Media Sequence Numbers/timestamps.</p> <p>As shown above, although the end user station initially requests the 915420 Bandwidth version of the program, it quickly switches to requesting the 3023543 Bandwidth version when bandwidth is adjusted. Those requests, as shown above, are “Completed,” meaning the streamlets were received from the one or more Brazzers servers.</p>
[14.9] provide the received first streamlet for playback of the video.	<p>Brazzers’s server(s) provide the received streamlets to the media player embedded in the web page of the Brazzers Premium Site.</p> <p>In response to requesting the first streamlet via an HTTP GET request, as shown above, the end user station accessing the Brazzers Premium Site receives the requested streamlet from the server via the one or more network connections. <i>See e.g.</i>, RFC 8216 at 4 (“Using this protocol, a client can receive a continuous stream of media from a server for concurrent presentation.”); <i>id.</i> at 5 (“To play this Playlist, the client first downloads it and then downloads and plays each Media Segment declared within it. The client reloads the Playlist as described in this document to discover any added segments.”).</p> <p>For the instant test, the end user station accessing the Brazzers Premium Site initially requests and receives the 915420 Bandwidth version of the streamlets. Upon making a determination that the higher bitrate can be supported, the end user station accessing the Brazzers Premium Site switches to request and receive the 3023543 Bandwidth version of the streamlets. Below is an excerpt of the Charles “Sequence” listing showing the same alongside the status of the requests.</p>

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	GET	stream-private-ht.project1content.com	.../hls/.../seg-3-f3-v1-a1.ts?...	...	Complete
	GET	stream-private-ht.project1content.com	.../hls/.../seg-4-f3-v1-a1.ts?...	...	Complete
	<p>Brazzers confirms that the media player embedded in the web page of the Brazzers Premium Site provides video playback to end user stations over a network connection on the Brazzers support webpage, https://www.support.brazzers.com. There, Brazzers troubleshoots problems end users may have with HLS and instructs users on how to optimize their video playback experience. <i>See</i> https://www.support.brazzers.com/technical.</p>				

U.S. Patent No. 11,470,138 to Brazzers

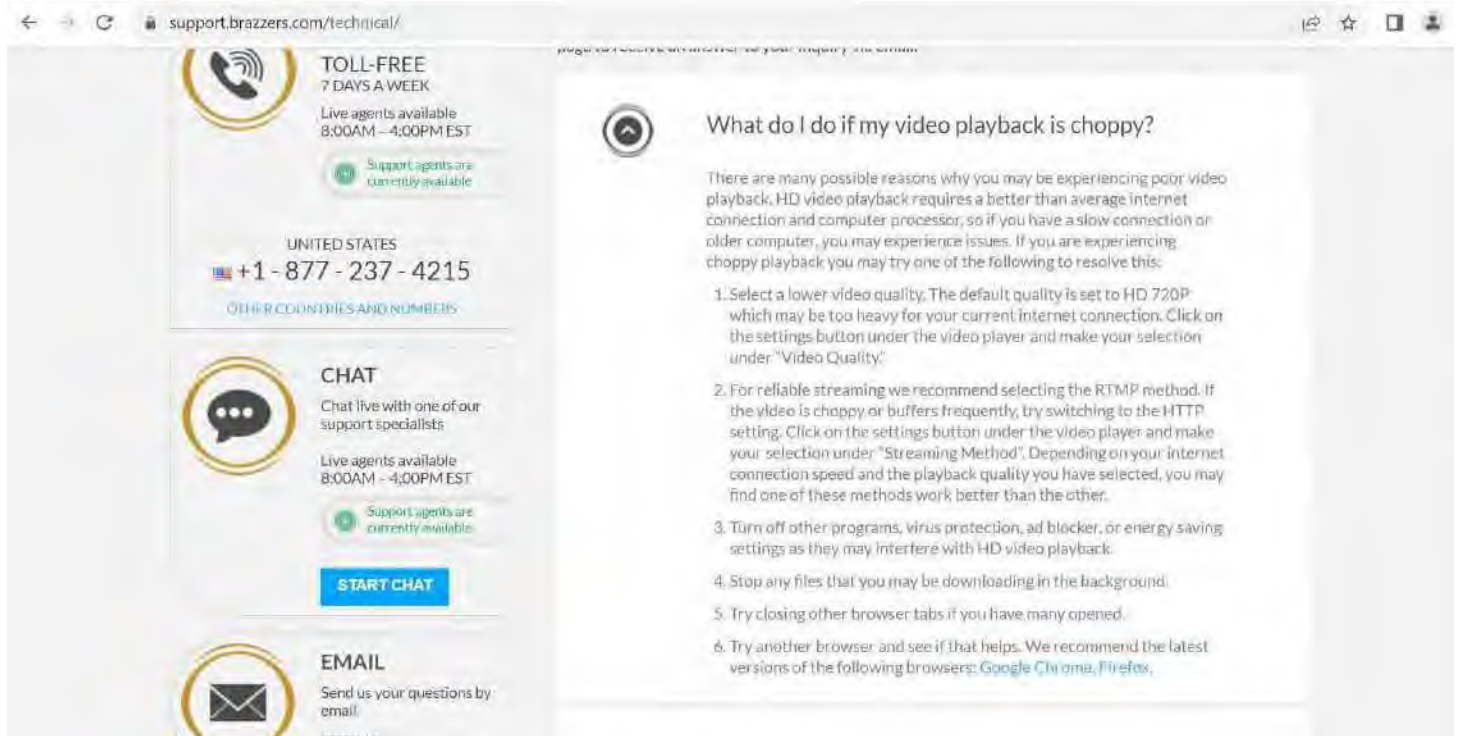
Claim Element	Example Infringement Evidence
	 <p>The screenshot shows the support.brazzers.com/technical/ page. On the left, there are three contact options: TOLL-FREE (7 DAYS A WEEK, Live agents available 8:00AM - 4:00PM EST, Support agents are currently available), CHAT (Chat live with one of our support specialists, Live agents available 8:00AM - 4:00PM EST, Support agents are currently available, START CHAT button), and EMAIL (Send us your questions by email). On the right, there is a section titled 'What do I do if my video playback is choppy?' with a list of six troubleshooting steps.</p> <p>TOLL-FREE 7 DAYS A WEEK Live agents available 8:00AM - 4:00PM EST Support agents are currently available</p> <p>UNITED STATES +1-877-237-4215 OTHER COUNTRIES AND NUMBERS</p> <p>CHAT Chat live with one of our support specialists Live agents available 8:00AM - 4:00PM EST Support agents are currently available START CHAT</p> <p>EMAIL Send us your questions by email</p> <p>What do I do if my video playback is choppy?</p> <p>There are many possible reasons why you may be experiencing poor video playback. HD video playback requires a better than average internet connection and computer processor, so if you have a slow connection or older computer, you may experience issues. If you are experiencing choppy playback you may try one of the following to resolve this:</p> <ol style="list-style-type: none"> 1. Select a lower video quality. The default quality is set to HD 720P which may be too heavy for your current internet connection. Click on the settings button under the video player and make your selection under "Video Quality". 2. For reliable streaming we recommend selecting the RTMP method. If the video is choppy or buffers frequently, try switching to the HTTP setting. Click on the settings button under the video player and make your selection under "Streaming Method". Depending on your internet connection speed and the playback quality you have selected, you may find one of these methods work better than the other. 3. Turn off other programs, virus protection, ad blocker, or energy saving settings as they may interfere with HD video playback. 4. Stop any files that you may be downloading in the background. 5. Try closing other browser tabs if you have many opened. 6. Try another browser and see if that helps. We recommend the latest versions of the following browsers: Google Chrome, Firefox.

EXHIBIT CCC

EXHIBIT CCC - MATERIALS CONSIDERED

U.S. Patent No. 10,951,680;

U.S. Patent No. 11,677,798;

U.S. Patent No. 9,407,564;

U.S. Patent No. 10,469,554;

U.S. Patent No. 8,868,772;

U.S. Patent No. 11,470,138;

DISH's Motion for Preliminary Injunction, *DISH Technologies L.L.C. v. MG Premium Ltd*, Case. No. 2:23-cv-552-BSJ (D. Utah);

Uniform Resource Identifier (URI): Generic Syntax, Independent Submission, Request for Comments, RFC 3986, T. Berners-Lee *et al.*, January 2005;

2019 AIPLA Model Patent Jury Instructions, American Intellectual Property Law Association;

Exhibit S – HTTP Live Streaming, Independent Submission, Request for Comments, RFC 8216, R. Pantos and W. May, August 2017;

Exhibit T – Initial Determination on Violation of Section 337 and Recommended Determination on Remedy and Bond, by Chief Administrative Law Judge Clark S. Cheney, issued in *In the Matter of Certain Fitness Devices, Streaming Components Thereof, and Systems Containing Same*, Inv. No. 337-TA-1265 (Sept. 9, 2022);

Exhibit U – Commission Opinion, issued in *In the Matter of Certain Fitness Devices, Streaming Components Thereof, and Systems Containing Same*, Inv. No. 227-TA-1265 (Mar. 23, 2023);

Exhibit WW – Claim Chart, U.S. Patent No. 10,951,680 to Brazzers;

Exhibit XX – Claim Chart, U.S. Patent No. 11,677,798 to Brazzers;

Exhibit YY – Claim Chart, U.S. Patent No. 9,407,564 to Brazzers;

Exhibit ZZ – Claim Chart, U.S. Patent No. 10,469,554 to Brazzers;

Exhibit AAA – Claim Chart, U.S. Patent No. 8,868,772 to Brazzers;

Exhibit BBB – Claim Chart, U.S. Patent No. 11,470,138 to Brazzers; and

any other materials cited in this Declaration.

EXHIBIT DDD

Exhibit DDD – List of Known Streaming Services and Accused Websites

Last Updated: September 12, 2023

	Streaming Service	Website
1	Brazzers	www.brazzers.com
2	Digital Playground	www.digitalplayground.com
3	Men.com	www.men.com
4	Sean Cody	www.seancody.com
5	Babes.com	www.babes.com
6	TransAngels	www.transangels.com
7	Reality Kings	www.realitykings.com
8	MOFOS	www.mofos.com
9	Twistys	www.twistys.com
10	Whynotbi	www.whynotbi.com
11	Fake Hub	www.fakehub.com
12	Fake Taxi	www.faketaxi.com
13	Lesbea	www.lesbea.com
14	Dane Jones	www.danejones.com
15	Sexy Hub	www.sexyhub.com
16	IKnowThatGirl	www.iknowthatgirl.com
17	Mile High Media	www.milehighmedia.com
18	Bang Bros	www.bangbros.com
19	Hentai Pros	www.hentaipros.com
20	Erito	www.erito.com
21	TransHarder	www.transharder.com

22	MetroHD	www.metrohd.com
23	Squirted	www.squirted.com
24	Property Sex	www.propertysex.com
25	TransSensual	www.transsensual.com
26	Bromo	www.bromo.com
27	BigStr	www.czechhunter.com
28	TrueAmateurs	www.trueamateurs.com
29	Massagerooms.com	www.sexyhub.com/massagerooms.com
30	MyGF	www.mygf.com
31	Deviante	www.deviante.com
32	Public Agent	www.publicagent.com
33	Fake Hostel	www.fakehostel.com
34	Fake Driving School	www.fakehub.com/fakedrivingschool
35	VR Temptation	www.vrtemptation.com
36	BiEmpire	www.biempire.com
37	Milfed	www.milfed.com
38	Family Hook Ups	www.familyhookups.com
39	Reality Dudes	www.realitydudes.com
40	Gilfed	www.gilfed.com
41	Dilfed	www.dilfed.com
42	NoirMale	www.noirmale.com
43	Icon Male	www.iconmale.com
44	Girl Grind	www.girlgrind.com
45	Kinky Spa	www.kinkyspa.com

46	She Will Cheat	www.shewillcheat.com
47	Deviant.Hardcore	www.devianthardcore.com

EXHIBIT EEE

60 MINUTES - NEWSMAKERS

Cyprus: Searching for the money of Russian oligarchs



BY SHARYN ALFONSI
SEPTEMBER 3, 2023 / 7:00 PM / CBS NEWS

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How U.S. prosecutors seize sanctioned Russian assets



Russia attacks Ukrainian port as Putin due to meet Erdogan



Ukrainian troops show how they use controversial U.S. cluster bombs



Ukrainian families contend with grief, loss amid counteroffensive



After Russia launched its invasion of Ukraine, the U.S. and its allies responded with sanctions targeting companies, oligarchs and officials with ties to Russian President Vladimir Putin.

Headlines trumpeted the trophies of Russian oligarchs seized throughout Europe - yachts in Italy, villas in the south of France and priceless art in Germany - but those fixed assets are relatively easy to locate. Finding the billions of dollars oligarchs have stashed around the world is proving to be more difficult.

How do you hide that much money from an international community that says it's determined to find it? The question led us to Cyprus - a tiny Mediterranean island at the crossroads of Europe, Asia and the Middle East. As we first reported in January, the once bustling vacation spot is in the middle of an international game of hide and seek.



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A poet once described Cyprus as a "golden green leaf thrown into the sea." The island, just 140 miles long, is wrapped in sandy beaches, and a rich history.



The Cyprus coastline

These turquoise waters, according to legend, were the birthplace of Aphrodite. But today, the "playground of the gods" has become a playland for wealthy Russians.

We headed down the southern coast of the island to Limassol. Before the war, it was a favorite spot for Russians to thaw. A three-hour flight from Moscow, Limassol's mix of designer shops, fur stores, Cyrillic signs and stores serving caviar earned it the nickname, "Moscow on the Med."

But Alexandra Attalides, a member of the Cyprus Parliament, says after the fall of the Soviet Union, the oligarchs who descended on the island weren't here for the beaches.

Alexandra Attalides: There are beautiful beaches in Spain, in Portugal, in Greece. There are a lot of beautiful beaches. I think that they found a fertile ground here that helped them.

Sharyn Alfonsi: How did the Russian oligarchs use Cyprus?

Alexandra Attalides: After 1989 when they stole the property of the Russian people and they started to build their empires. And then maybe they were afraid that someday something will happen, so they wanted their assets to be safe outside Russia. So they were looking for tax havens, and we had a very low tax rate at the time.

Sharyn Alfonsi: They got a place to hide their assets.

Alexandra Attalides: Yeah.

Maira Martini: Cyprus historically built a financial system to attract overseas wealth.

Maira Martini is an analyst for Transparency International, a nonprofit that tracks money laundering around the world. She says for decades, if you were an oligarch or just a shady character looking to hide your rubles, Cyprus, was hard to beat.

Maira Martini: It offers the secrecy and still security and that's what criminals and corrupt individuals are usually looking for.

Sharyn Alfonsi: What do you mean it offers secrecy?

Maira Martini: So in Cyprus, for many years you could open a bank account without having a lot of questions asked. You can open a company without having a lot of questions asked, meaning you can put the money there without needing to tell who you are, where the money comes from.

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How U.S. prosecutors are seeking Russian assets

Cyprus became as famous for its opaque banking as its clear water. Soon, like sun-starved tourists, foreign money started pouring into the island.

By 2012, the country of about a million residents had amassed bank deposits of nearly 72 billion euros. About 30% of those bank deposits came from Russian nationals.

But in 2013, the tide turned. The debt crisis in neighboring Greece, threatened to sink the Cyprus economy.

Lawmakers, fearing the country would lose all that Russian capital, pushed a scheme other countries had used to attract wealth - a "citizenship by investment" program.

Alexandra Attalides: From the beginning, for me, this was unacceptable.

Here's how it worked. Any foreigner who invested more than 2 million euros in the country, typically buying real estate, could get a Cypriot passport, a coveted possession because Cyprus is part of the European Union.

Alexandra Attalides: So the people who are buying the passport of Cyprus, they were buying the European passport. They were buying an open door to 27 countries.

From 2013 to 2020, Cyprus issued almost 7,000 of those "golden passports" – nearly half to Russians.

Suddenly, the skyline of Limassol was injected with high-rise luxury apartments, its port with mega yachts and its stores with uber-wealthy Russians.

Alexandra Attalides: You could see them walking around like princesses, moving in the most expensive shops. They have their business, they have their houses, they have luxury houses.

But in 2020, an undercover investigation by Al Jazeera revealed corruption in the passport program.

Cyprus had illegally issued hundreds of "golden passports," some to criminals and fugitives.

After protests and under pressure from the EU, the Cyprus government shuttered the program weeks later. But the passports were still out there.

Alexandra Attalides: When you give passports to people that later we realize that they are criminals, then you open the door of Europe to criminals.



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Alexandra Attalides

The golden passports also opened the door of Europe to Russian elites. 60 Minutes has learned that at least a dozen of these now-sanctioned Russian oligarchs - were issued - "golden passports."

Among them: Igor Kesaev who owned a Russian arms factory.

Billionaire Alexander Ponomarenko, who was the chairman of the board of Russia's biggest airport and who the U.S. government calls one of Putin's "enablers."

And aluminum tycoon Oleg Deripaska, part of Putin's inner circle. According to the U.S. Treasury, he's been investigated internationally for, among other things, money laundering, illegal wiretapping and extortion, accusations he denies.

Maira Martini told us a Cypriot passport could make it easier for those sanctioned oligarchs to buy property and move assets and that the cozy relationship between wealthy Russians and Cyprus is raising concern internationally.

Maira Martini: If you're a small country that is very dependent on foreign money coming from one single country, this also even might create a conflict, right?

Sharyn Alfonsi: Really sanctions are only as strong as the weakest link. Is Cyprus the weakest link here?

Maira Martini: I think Cyprus is one of the weakest links.



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Meira Martini

Then Cyprus Minister of Finance Constantinos Petrides disagrees. We first spoke to him last fall. His office oversaw efforts to freeze the Cyprus assets of anyone sanctioned by the EU.

Sharyn Alfonsi: Who has been sanctioned, specifically, individuals within Cyprus?

Constantinos Petrides: Regarding the citizenship, I think about ten people were found under restrictive measures. And the Council of Ministers has initiated a process to revoke their passports.

Sharyn Alfonsi: The ten people that have been sanctioned, who are they?

Constantinos Petrides: I don't have any, any names now.

Sharyn Alfonsi: But would you be able to provide us with that list of names if we asked for it?

Constantinos Petrides: I'm not sure. I would have to, I would have to see.

We sent Minister Petrides a request for those names and the list of any assets of sanctioned Russians that Cyprus has seized or frozen.

In a series of e-mails, Petrides' office responded that due to European data protection rules, "no detailed list can be made public." But other EU countries have publicized detailed lists of their actions.

Sharyn Alfonsi: So is the expectation that everyone should just *trust* the Cyprus government that they're implementing the sanctions that they're supposed to on Russians?

Constantinos Petrides: I'm not saying that everybody should trust the Cyprus government. The Cyprus government does not need somebody to trust it. We have the reports of the mutual assessment for Cyprus 2019 that shows all the progress made in the past years. I think that we have proved as Cyprus that we are a reliable member of the, of the EU. We do admit that in the past there have been mistakes. But Cyprus has also been unfairly stigmatized.



Constantinos Petrides

Petrides told us the passports of sanctioned oligarchs are in the "process" of being revoked and said Cyprus has seized 105 million euros of Russian deposits. A big number, but just a fraction of the estimated 5.6 billion euros of Russian deposits made in Cyprus last year. We also asked Minister Petrides about this, the dozens of Cyprus properties and active shell companies we were able to trace back to sanctioned Russians.

He told us any Cypriot company with an EU-sanctioned oligarch listed as the owner has been placed under "increased scrutiny."

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But often, Russian oligarchs don't list their names anywhere near their assets.

Take the case of Roman Abramovich and his planes. According to U.S. investigators, they were hidden under five shell companies, stacked like Russian nesting dolls, with addresses in the BVI and British island of Jersey, all leading to an anonymous trust in Cyprus.

But it wasn't Cyprus authorities who ultimately moved to seize the planes. It was prosecutors from the U.S. Department of Justice.

Lisa Monaco: There's always been dark corners of the international financial system. And kind of like water finding a crack, that's where the criminal networks will go.

U.S. Deputy Attorney General Lisa Monaco is in charge of the Department of Justice's "Kleptocapture Unit," tasked with finding the assets of sanctioned oligarchs hidden around the world.

Sharyn Alfonsi: It used to be, you know, the guy fleeing with suitcases of money. That's not the case anymore.

Lisa Monaco: It is not.

Sharyn Alfonsi: It is crypto. It is planes. It is yachts. It is layered. And so how do you keep up with it?

Lisa Monaco: Even the most notorious actors, whether it's the mafia, whether it's rogue regimes, the best tool we have is following the money.



Lisa Monaco

The money has led DOJ investigators around the world and closer to home.

It turns out, like the tourists who visit Cyprus, dirty money doesn't stay on the island forever. Typically, it's "washed" and invested in other, western economies.

Investigators say that's one way Oleg Deripaska has been able to skirt sanctions.

Lisa Monaco: What the task force exposed was the network of enablers, and money launderers, and facilitators who helped him hide his wealth in real estate here in Washington D.C. and in Manhattan.

Sharyn Alfonsi: In the United States?

Lisa Monaco: In the United States, in artwork, in vanity businesses, including a music studio in Beverly Hills.

In their case, the DOJ alleges that in 2020, Oleg Deripaska arranged for one of his children to be born in the United States, even though he was under U.S. sanctions.

Sharyn Alfonsi: He has a child that's a U.S. citizen now?

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Lisa Monaco: He was able to do that in one instance. And then in the second instance, that was not accomplished.

Because U.S. Customs stopped it. The government case details how, as the war in Ukraine intensified, Deripaska used a "Cyprus" company to arrange "travel on a private jet from Russia to Los Angeles" for his pregnant girlfriend, moving money to rent a home for her in Beverly Hills. But when she landed in Los Angeles last summer, she was stopped by customs officers.

Deripaska, his girlfriend and the U.S. resident who helped him are now charged with sanctions evasion. They are not in custody, but the DOJ has announced plans to seize his U.S. properties worth an estimated \$70 million.

Since the start of the war, the U.S. has moved to seize more than a billion dollars of sanctioned assets around the world.

Sharyn Alfonsi: So what should happen to those assets?

Lisa Monaco: We are seeking the authority from Congress to allow us to use the proceeds for the benefit of the Ukrainian people.

Oleg Deripaska has publicly criticized the economic impact the war in Ukraine could have on Russia. But U.S. investigators maintain he is a "Putin cronie" who is "propping up Russia's war machine."

Back in Cyprus, 60 Minutes found a villa in this seaside complex, offices in this building and more than a dozen "active" shell companies linked to Oleg Deripaska. The Cyprus government will not say whether it has frozen any of those assets.

Produced by Oriana Zill de Granados. Associate producer, Emily Gordon. Broadcast associate, Elizabeth Germino. Edited by Michael Mongulla.

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How U.S. prosecutors seize sanctioned Russian assets



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Investigations / Russia Archive

FINANCIAL SECRECY

How a network of enablers have helped Russia's oligarchs hide their wealth abroad

Elites close to Vladimir Putin have funneled billions through tax havens to evade scrutiny and oversight. Lawyers, proxies and bankers across the world made it possible.

By [Spencer Woodman](#)

Image: Kirill KukhmarTASS via Getty Images

March 2, 2022



This image shows money and a Visa card. On Feb. 24, the United States announced it was imposing sanctions on major Russian banks in response to the invasion of Ukraine.

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Money doesn't just move and hide itself. The flight of Russia's wealth has been supported by big banks and a global industry of professionals who specialize in providing rich clients with shell companies, trusts and other secretive vehicles.

For nearly a decade, the International Consortium of Investigative Journalists has worked to unveil both the true owners of secretive entities and also the professionals who underpin the offshore economy. This reporting has triggered billions in recoveries, led to the collapse of business empires and prompted new transparency laws. But true systemic change has been slow in coming. Western authorities have largely turned a blind eye to the people and companies that keep the dark money system running.

Even now, the ENABLERS Act — which would require a broad range of professionals such as attorneys and art dealers to perform basic due diligence on their elite clients' sources of wealth — remains stalled in the U.S. Congress.

So who are the enablers of the offshore system? They range from global law firms, like Baker McKenzie, an architect of the modern tax avoidance system, to tiny one-person operators working from Bermuda.

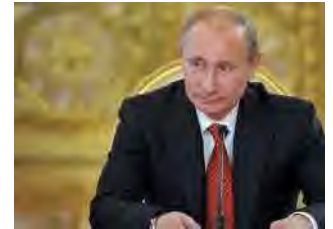
Here is a selection of facilitators, offshore agents and banks that ICIJ has identified as aiding Russia's elite move and hide money.

Facilitators

Firms and individuals who have set up or used opaque financial structures for Russian elites

Alastair Tulloch: Tulloch & Co., run by the British attorney Alastair Tulloch, is situated in a posh district in London, one of the most well-known destinations for elite Russian wealth. ICIJ's Pandora Papers investigation reported that Tulloch's firm structured networks of companies for former Russian Deputy Finance Minister Andrey Vavilov; Alexander Mamut, a billionaire oligarch and political insider; and Vitaly Zhogin, a banker wanted in Russia for alleged fraud. Tulloch used offshore services provider Trident Trust to arrange for their assets to be transferred to shell companies registered in the British Virgin Islands, Cyprus and the Bahamas. Tulloch did not respond to requests for comment.

Sergey Roldugin: A 2016 ICIJ investigation found that Roldugin, a Russian childhood friend of Putin and a classical cellist, has been a behind-the-scenes player in a clandestine network operated by Putin associates that has shuffled at least \$2 billion through banks and offshore companies. At the time of the reporting, Roldugin did not respond to detailed questions from multiple newsrooms. The European Union sanctioned Roldugin on Monday, citing ICIJ's findings.



Many of Russian President Vladimir Putin's close allies have been found investigations into offshore secret President of Russia.

Peter Kolbin: Peter Kolbin, another longtime friend of Putin, is suspected by U.S. authorities of holding hundreds of millions of dollars for the Russian president. Pandora Papers records show that Kolbin "changed the registered ownership of offshore companies as sanctions hit" Russians in 2014, according to the Washington Post, an ICIJ partner. Kolbin could not be reached for comment and it is uncertain whether he is still living.

Moore's Rowland: Documents reviewed by ICIJ and its partners tie Svetlana Krivonogikh, a woman allegedly in a secret, years-long relationship with Putin to a luxury Monaco apartment. Moore's Rowland, a Monaco financial services firm that managed transactions surrounding the apartment, used shell companies that would have made it difficult for anyone seeking to unravel the property's ownership, according to the Washington Post. One of the involved shell companies was tucked inside a second shell company, which was in turn owned by Eamonn McGregor, a British-born accountant who runs Moore's Rowland in Monaco, according to The Post. In a letter to The Post, a British law firm representing Moore's Rowland defended its client but did not provide any comment for publication.

Gennady Timchenko, a billionaire in Putin's inner circle recently sanctioned by UK authorities, was also a client of Moore's Rowland and has used one of the same nominee shareholders. Timchenko's lawyers said that any connection between him and Krivonogikh was "misconceived."

[Contact us](#)

Do you have questions for ICIJ about how oligarchs and Russian elites close to Vladimir Putin hide their wealth? We want to hear from you!

[✉ Email the reporter](#)

Markom Management (Mark Omelnitski): The firm is owned and run by Mark Omelnitski, identified in a [U.S. Senate report](#) as a London-based lawyer. Markom [is linked to](#) sanctioned members of Russian President Vladimir Putin's inner circle, Arkady and Boris Rotenberg. In a November 2016 suspicious activity report, [Barclays bank said it flagged three wire transfers](#) totaling nearly \$114,000 between 2013 and 2016 because it believed that the money was flowing into a shell company owned by a businessman linked to Arkady Rotenberg.

Omelnitski and his company "created shell companies for sanctioned individual [Arkady] Rotenberg," according to a Barclays investigative memo that was excerpted in the Senate report. "[T]he ownership of these shell companies appears to be intentionally structured to be opaque in order to hide the identity of the true beneficiaries." Omelnitski [declined](#) comment through a lawyer.

Offshore agents

Firms that created shell companies, trusts and other secretive financial products for wealthy Russians in tax havens

Asiaciti Trust: Asiaciti Trust is a firm [based in Singapore](#), with operations in New Zealand, the Cook Islands, Samoa and elsewhere. Asiaciti [has set up](#) and managed trusts and shell companies in secrecy jurisdictions for hundreds of South American, U.S., Asian and European clients, according to the Pandora Papers. Asiaciti helped Kirill Androsov, a former senior aide to Putin, with a structure through which he acquired a company that Russian oligarch Oleg Deripaska owed \$200 million, [according to](#) the Washington Post. In a written statement, Asiaciti [denied any wrongdoing](#) and declined to discuss its interactions with Androsov.

Appleby: Appleby, the global offshore law firm, [is a member](#) of the "Offshore Magic Circle," a group of the world's leading offshore law practices. The firm was founded in Bermuda and has offices in Hong Kong, Shanghai, the British Virgin Islands, the Cayman Islands and other offshore centers. Records from [ICIJ's Paradise Papers investigation](#) show how former U.S. President Donald Trump's commerce secretary, Wilbur Ross, used a chain of Cayman Islands entities to maintain a financial stake in Navigator Holdings, a shipping company whose top clients include the [Kremlin-linked energy firm Sibur](#). Among Sibur's key owners were Kirill Shamalov, Putin's son-in-law, and Gennady Timchenko, a billionaire the U.S. government sanctioned in 2014 because of his links to Putin. Sibur had been a major customer of Navigator, paying the company more than \$23 million in 2016.

Appleby did not reply to ICIJ's detailed questions at the time of the reporting but released an online statement saying it had investigated ICIJ's questions and is "satisfied that there is no evidence of any wrongdoing." A spokesman for Ross said at the time that he never met Putin's son-in-law or Sibur's other owners and that he was not on the board of Navigator when it initiated its relationship with Sibur.

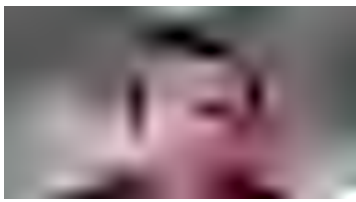
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RUSSIA

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OCT 03, 2021



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NOV 05, 2017

Alpha Consulting Limited: Founded in 2008, Alpha is an offshore services provider with offices in the Seychelles, United Arab Emirates and Belize. Alpha's customer base is 75% Russian, according to the company's 2019 annual report. Alpha's clients include Roman Avdeev, a Russian billionaire who is listed on the 2018 U.S. Treasury Department's report to Congress on oligarchs and companies considered close to Putin.

In a response to ICIJ's questions, Alpha said it was prevented by law from discussing clients. "Since its start of business in 2008, Alpha Consulting has been in compliance with local and international legal requirements," the company said.

Demetrios A. Demetriades: The law firm Demetrios A. Demetriades promoted Cyprus as the offshore center of choice for money flowing out of Russia after the fall of the Soviet Union. More than 30% of the companies in the Pandora Papers that received services from the firm, known as DADLAW, had one or more Russians as beneficial owners. Its clients include public officials, accused fraudsters and sanctioned businesspeople from Russia and other former Soviet republics.

Like many other offshore providers, DADLAW profits from its host country's rules governing taxation and secrecy, which allow it to help clients conceal assets from foreign authorities. It registers shell companies, sets up and manages trusts, and provides "nominee" shareholders — paid stand-ins for the real owners on official paperwork. DADLAW did not respond to questions from ICIJ.

Banks

Financial institutions that have moved money for wealthy Russians

HSBC: HSBC, based in the U.K., has faced allegations in multiple countries that it provided bank accounts to criminals. In the FinCEN Files, ICIJ and BuzzFeed News took a close look at HSBC's involvement in suspect money, including from Russia. According to an ICIJ review of data collected by the Organized Crime and Corruption Reporting Project, HSBC banked a shell company that was a major node in the "Russian Laundromat," a sprawling network that moved criminally tainted money from former Soviet states to the West. Between 2012 and 2014, HSBC processed \$581 million in transfers into and out of the shell company's Hong Kong accounts, although HSBC compliance officers did not understand who was behind the shell company, ICIJ found. In a statement, HSBC said it had "embarked on a multi-year journey to overhaul its ability to combat financial crime." HSBC "is a much safer institution than it was in 2012."

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ICIJ accepts information about wrongdoing by corporate, government or public services around the world. We do our utmost to guarantee the confidentiality of our sources.

Deutsche Bank: Deutsche Bank played an important role in the so-called Russian mirror trading scandal — a vast money moving network that used complex securities swaps to move billions in questionable funds outside the country. The FinCEN Files investigation revealed that "Deutsche managers, including top executives, had direct knowledge for years of serious failings that left the bank vulnerable to money launderers," according to reporting by ICIJ partner BuzzFeed News. "Documents show two warnings sent to committees that included Paul Achleitner, Deutsche's chair, and one sent to the bank's supervisory board," according to BuzzFeed News. The bank, responding to questions from reporters, said it has acknowledged "past weaknesses" and "learnt from our mistakes," while investing hundreds of millions of dollars to bolster its defenses against financial crimes, according to BuzzFeed News.

Danske Bank: In 2018, Danske bank became engulfed in a major scandal centering on its alleged facilitation of laundering hundreds of billions of dollars out of Russia and other former Soviet states. ICIJ reporting from 2021 revealed the extraordinary steps a tiny division of the bank took to serve a shadowy, and highly lucrative, clientele largely from Russia and from former Soviet republics and satellites in Eastern Europe and Central Asia. The documents show that many bank accounts were held in the name of U.K. vehicles, known as "limited liability partnerships," or LLPs, and "limited partnerships," LPs, which had no purpose other than to hide the identity of who really owned the money. Several former bankers in Danske Bank's troubled division did not respond to ICIJ's questions.

Will Fitzgibbon contributed reporting.

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EXHIBIT GGG

Cyprus Firm Helped Sanctioned Russian Oligarch Move Funds

 Credit: James O'Brien/OCCRP

by Tom Stocks (OCCRP)

18 April 2023

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Cypriot corporate service provider MeritServus helped Konstantin Malofeev, an oligarch sanctioned for his support of Russian-backed separatist rebels in eastern Ukraine, transfer debt worth tens of millions of dollars even after he was blacklisted, leaked documents show.

Key Findings

MeritServus set up the Cypriot company Tinello Investments Limited in 2005 and held the company's shares on behalf of Malofeev, via a trust deed, until 2017 — keeping Malofeev effectively in charge of the company but his name off its books.

Between 2014, when Malofeev was sanctioned, and 2017, when it dropped him as a client, MeritServus signed paperwork that helped the oligarch move loans between his Cyprus shell firm and his other companies, despite EU and U.S. sanctions.

Malofeev, who owns a TV channel that promotes Kremlin propaganda on the Ukraine conflict, was sanctioned for funding Russian-backed separatist fighters in eastern Ukraine.

Experts said the loan deals likely meant both MeritServus and Malofeev's Cypriot company had violated sanctions.



Russian investor-turned-propagandist Konstantin Malofeev was able to shuffle tens of millions of dollars worth of debt between his shell companies with the help of a Cypriot corporate services provider despite being sanctioned by the European Union and the U.S., leaked documents show.

Malofeev was blacklisted in 2014 for supporting Russian-backed separatists in eastern Ukraine, which should have barred EU companies from working with him. But the Cypriot firm MeritServus, which was once part of the international accounting giant Deloitte, secretly continued to work with Malofeev's Cyprus shell company for nearly three years after that before dropping him as a client.

MeritServus' relationship with Malofeev, as well as other sanctioned Russian oligarchs (<https://www.theguardian.com/world/2023/apr/18/the-cyprus-connection-the-family-firm-that-helped-pour-abramovichs-millions-into-chelsea>) linked to President Vladimir Putin, is detailed in a leak of internal company files released by the whistleblower group Distributed Denial of Secrets. It is the latest example of compliance failures revealed by the leaked documents. MeritServus and its managing director were sanctioned by the U.K. last week for acting for Roman Abramovich. OCCRP reported on MeritServus' link to Abramovich in January. ([/en/investigations/credit-suisse-banked-abramovich-fortune-held-in-secret-offshore-companies](https://www.occrp.org/en/investigations/credit-suisse-banked-abramovich-fortune-held-in-secret-offshore-companies)).

Malofeev, who has been dubbed "the Orthodox Oligarch," is an enthusiastic supporter of both Putin's foreign policy on Ukraine and the Russian Orthodox Church, which is closely aligned with the Kremlin. He made a fortune from his Moscow-based investment group, Marshall Capital, during Russia's economic boom of the 2000s.



Credit: Lous Whinston/CC BY-SA 2.0, via Wikimedia Commons

Konstantin Malofeev.

He later gained international infamy after his blacklisting for financially supporting Russia's 2014 incursions into eastern Ukraine. Malofeev also founded Tsargrad TV, which broadcasts pro-Kremlin propaganda on the Ukraine conflict.

In a response to OCCRP's media partner The Guardian, MeritServus said that it had "inadvertently" failed to identify that Malofeev was sanctioned until 2017 — almost three years after EU sanctions were first imposed on him.

"As soon as our client became aware of this error, it informed its regulator ... and reported all transactions," the firm's lawyers said, adding that MeritServus had stopped working with Malofeev in March 2017.



“Our client was at all times fully transparent and the position was resolved with both [Cypriot regulator the Institute of Certified Public Accountants of Cyprus] ICPAC and MOKAS (the Cyprus Unit for Combating Money Laundering),” the lawyers said.

Kyriakos Iordanou, the general manager of ICPAC, told OCCRP that it had “summoned MeritServus to its offices” in May 2017 after learning of its work for Malofeev. MOKAS did not comment.

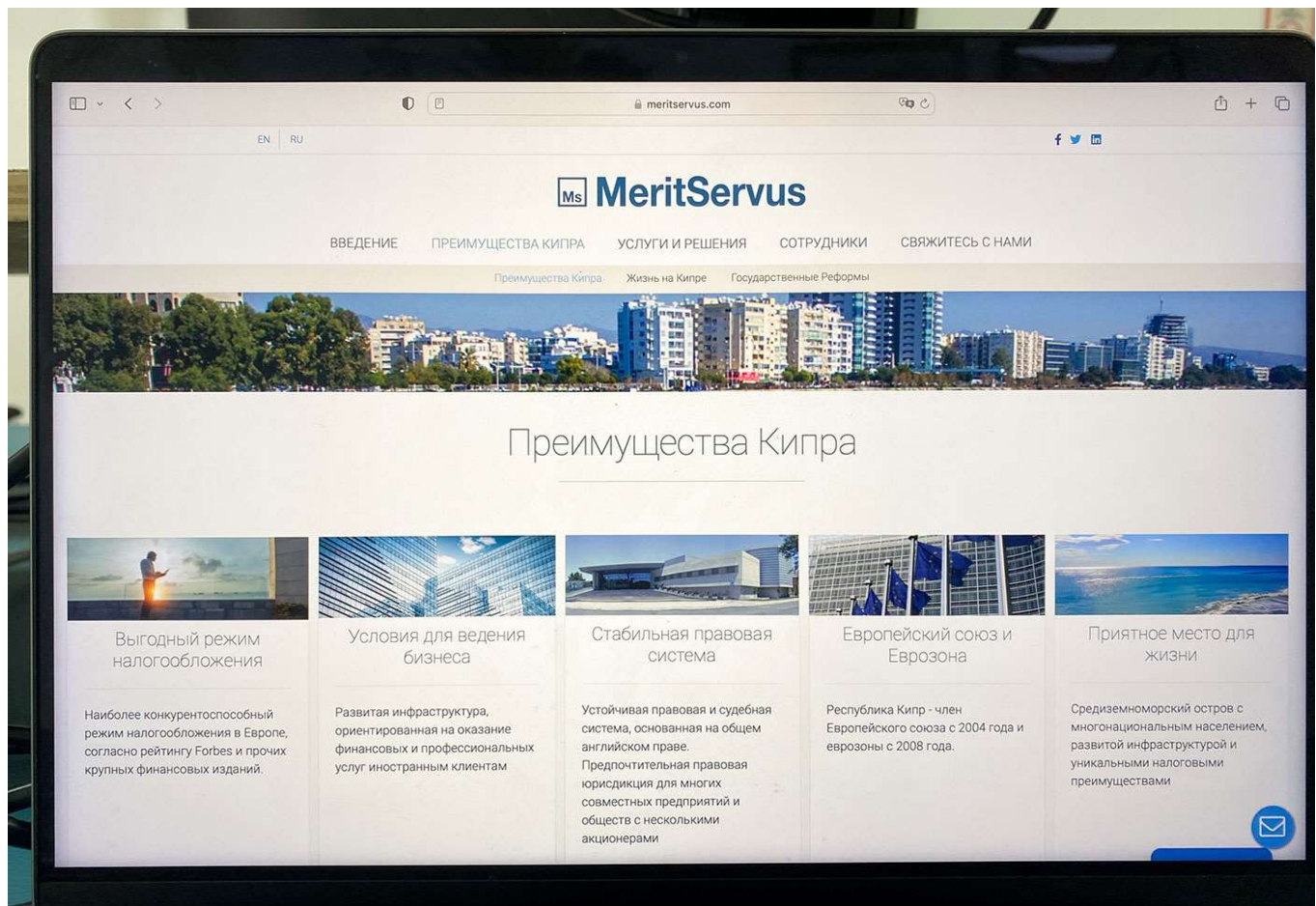
Tom Keatinge, director of the Centre for Financial Crime and Security Studies at the U.K.-based think tank Royal United Services Institute, said that a gap of nearly three years between international sanctions being imposed on Malofeev and Meritservus noticing them suggested “at best a systemic failure in compliance ... at worst there was some form of complicit negligence.”

“This sort of failing (whether systemic, negligent or complicit) should almost certainly result in some form of sanction/penalty,” he added.

Malofeev did not respond to requests for comment.

A Secret Beneficiary

MeritServus, a family-run corporate services provider, was set up in the 1980s as part of the global consultancy Deloitte, and until earlier this year claimed on its website to be the firm’s “preferred service provider.” (Deloitte refuted this and said MeritServus had “not been part of, or affiliated with” Deloitte since 2005). It is based in the Mediterranean city of Limassol, which has earned the nickname of “Limassolgrad” thanks to its reputation as a hub for Russian offshore wealth.



A screenshot from MeritServus's website explaining why Russians should do business in Cyprus.

MeritServus sets up and administers corporate structures for its clients, marketing itself as the “perfect gateway to the European Union” for customers in countries such as Iran and China. But above all, Russian clients sustain its business.



“The affinity between Russia and Cyprus is clearly not only a matter of tax and commerce. The links between the two countries are cultural and social,” says a promotional message on MeritServus’ website.

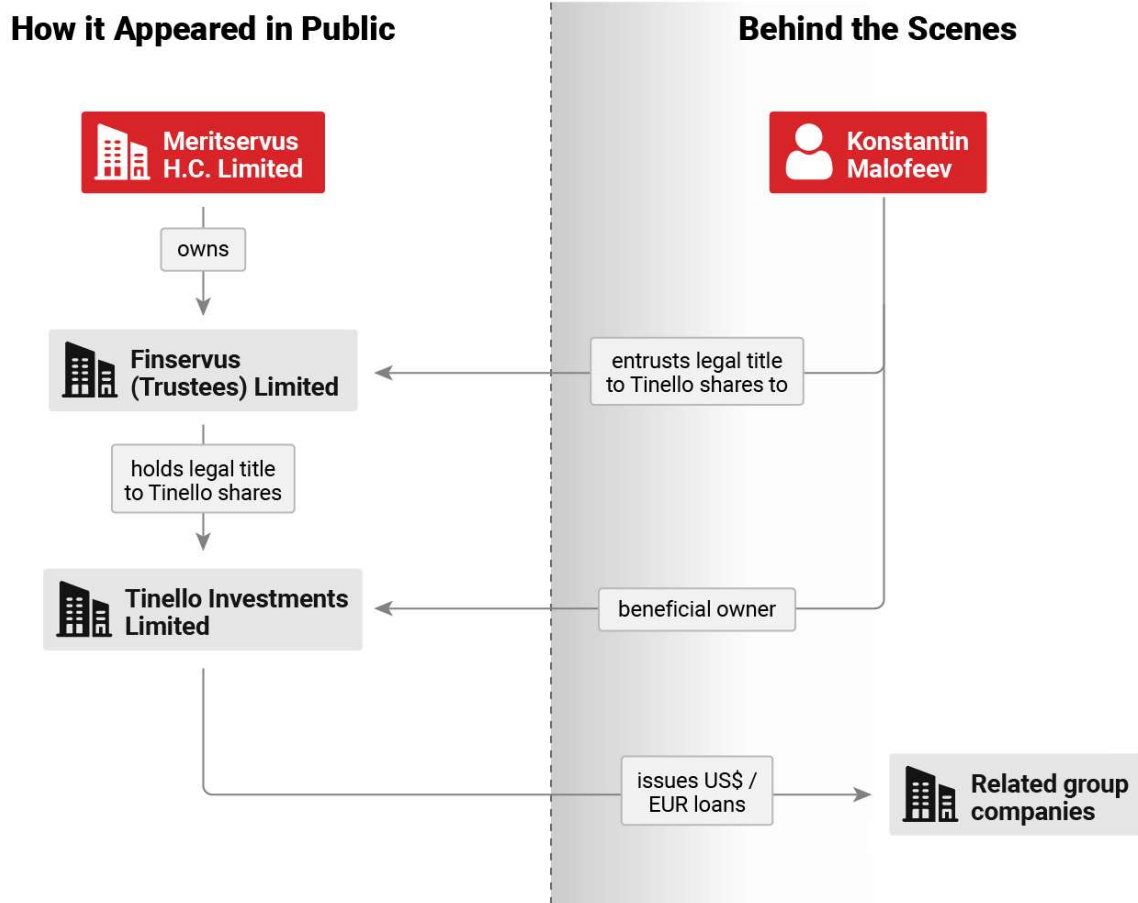
In 2005, Malofeev, then an up-and-coming 30-year-old businessman, set up a company through MeritServus called Tinello Investments Limited. He also signed an agreement with FinServus, a MeritServus subsidiary, to operate Tinello on his behalf.

This agreement, known as a “trust deed,” meant Tinello’s shares were registered in FinServus’ name even though Malofeev was “beneficially interested and entitled” to them.

FinServus was obliged to pay dividends to Malofeev and generally follow his wishes at all times, and had to transfer the shares into his name as soon as instructed, the leaked paperwork shows.

In effect, the trust deed allowed Malofeev to maintain full control of the company while keeping his name off its books.

How Malofeev's Interest in Tinello Investments Limited was Concealed



Credit: Edin Pašović/OCCRP

“If you set up an anonymous company, if you put this in a trust, where there is no information available to the public or even to the authorities, you make it very difficult to link an asset or company back to you,” said Maíra Martini, an expert on corrupt financial flows at Transparency International.

Later in 2005, Malofeev established Marshall Capital, a private equity firm that would go on to make investments in major Russian businesses, including a large stake in Rostelecom, the national telecommunications company.



Even though the trust deed with FinServus obscured any outward link to Malofeev, leaked documents show that Tinello quickly began engaging in financial transactions with many of his other companies. In 2006 it began issuing multiple loans to other Malofeev companies, including some owned by Marshall Capital.

Funding an Insurgency

After Russia's 2014 incursion into Crimea and eastern Ukraine, the EU and U.S. both sanctioned Malofeev for financing separatist rebels. The Ukrainian government also opened a criminal investigation into Malofeev's alleged support for the insurgents.

Former employees of Malofeev's companies took prominent roles in Russian-backed separatist regions, including Alexander Borodai, who was installed as the puppet leader of the so-called Donetsk People's Republic, and Igor Girkin, who was made one of the region's top military commanders. Girkin, a former Russian military intelligence officer, was later convicted in absentia in the Netherlands for murder over his role in the downing of a Malaysian civilian airliner in 2014, which killed 298 people.



Credit: Reuters/Alamy Stock Photo

Reconstructed crash debris from Malaysia Airlines MH17.

Though Malofeev denies funding separatists in Ukraine, his TV channel, Tsargrad TV, has been a vocal supporter of Russia's military actions for years. Last year, a page titled "Our Heroes" appeared on the channel's website, dedicated to Russian soldiers killed over the past year in Ukraine. Young men in military uniform appear beneath captions proclaiming grand, pro-Russian ambitions: "They didn't go through hell for money, but so that we could live in a Russian world. On peaceful land," one caption reads.

The channel's coverage "worship[s] Putin as the second coming of Christ," according to Irene Kenyon, a former senior intelligence officer at the U.S. Treasury Department who now works as a director at risk consultancy FiveBy.

Kenyon recalled tracking Malofeev's finances as early as 2014, while she was at the Treasury Department.



“We had information about him funneling weapons and money to separatists in eastern Ukraine. If he can access the global financial system... to transfer money to these separatists, he is funding an insurgency,” she said.

Under EU and U.S. sanctions laws, banks are required to freeze assets if they are more than 50-percent owned by a sanctioned individual, or if that person can be shown to have direct or indirect control of the assets. Companies from the EU or U.S. are largely forbidden from working with sanctioned people or entities.

But for more than two years after EU sanctions were imposed on Malofeev in 2014, the oligarch was able to make financial arrangements for his companies through the trust administered through MeritServus, including signing a new loan agreement and shuffling existing loans between dozens of companies and subsidiaries he owned — some in offshore tax havens like Panama and the Seychelles.

Debt Shuffling

Malofeev was able to use the trust deed to move loans between his offshore companies in a flurry of activity in the first half of 2015, by which time he had been under EU sanctions for at least nine months. MeritServus also signed off on the conversion of dollar-denominated debt to rubles in 2016.

- On March 19, 2015, a MeritServus representative signed an agreement allowing Panama-registered Porthos Management Inc., which was part of Malofeev's corporate group, to transfer rights to an existing 2.5-million-euro (\$2.71-million) loan to Tinello.
- Less than two weeks later, Tinello transferred the rights to a \$17-million loan, originally issued to Isma LLC, a Russian company in the Tsargrad group — whose media arm publishes Kremlin propaganda on the Ukraine war — to Aguilas Trading Limited, a Seychelles company previously owned by Malofeev.
- On the same day, Tinello transferred rights to a \$3.6 million loan originally issued to Tureya LLC — another Russian subsidiary in the Tsargrad group that is still directed by Malofeev's brother — to Aguilas Trading.
- On June 3, 2015, Tinello signed an agreement to borrow \$7.5 million from Marcap Investments Group Limited, a Cypriot subsidiary of Malofeev's Marshall Capital. The agreement referred to banks in the U.S. and Switzerland — jurisdictions whose governments had already introduced sanctions against Malofeev — through which repayments would be processed.
- In July 2016 MeritServus authorized the conversion into Russian currency of a \$14.1-million loan that Tinello had previously issued to SNM LLC, another Tsargrad group subsidiary which was directed by Malofeev's brother.

MeritServus seemed to finally become uncomfortable with the Malofeev account in March 2017, when an “internal suspicion report” flagged Malofeev's refusal to provide an updated passport copy, as well as his failure to prepare financial accounts for more than a decade.

In an undated “client risk indicator,” MeritServus flagged the EU sanctions against Malofeev and several other risk factors including “undue levels of secrecy by client,” a failure to provide “financial/commercial rationale” for at least one transaction, and the fact that the origin and source of his wealth could not be identified.

Shares in Tinello were finally transferred to Malofeev's name in May 2017, when the businessman's interest in the Cyprus firm was first recorded in an official company registry.

Experts said that MeritServus appears to have violated EU sanctions by working with Malofeev during this period.

“Any entity involved in this scheme that is in the EU would have been guilty of facilitating sanctions evasion,” said Keatinge of RUSI.

Tinello's U.S.-dollar-denominated loan from Malofeev's Marcap Investments Group Limited and other debt transfers may also have violated U.S. sanctions, according to Kenyon.

“The purpose of putting somebody on the [sanctions] list is to cut them off from the U.S. dollar, so if [loans were issued] to Malofeev as a sanctioned individual using U.S. dollars, then I'd think they'd be in violation,” she said.

“Those who are allowing sanctioned individuals and entities to transfer money are opening a gate for these malign actors to access the global financial system and corrupt it,” Kenyon added.



Writing in response to OCCRP's media partner The Guardian, lawyers for MeritServus said that after learning about the sanctions in March 2017 — almost three years after they were imposed — the firm terminated its relationship with Malofeev and reported all transactions to its regulator, ICPAC.

ICPAC manager Iordanou said the regulator had “requested full disclosure regarding the case” when it spoke to MeritServus in 2017.

ICPAC decided not to penalize MeritServus at the time, but Iordanou said that after the imposition of U.K. sanctions against the company last week, “ICPAC will evaluate the situation and consider whether it would be warranted to take any action.”

Asked whether U.K. sanctions against MeritServus exposed an oversight by the Cypriot regulator, a spokesperson for the Cypriot government defended its track record of implementing and monitoring sanctions. The individuals and companies sanctioned by the U.K. last week had been “submitted to the competent authorities” in Cyprus, the spokesperson said.

Lax Regulations

The EU did not move to standardize punishments for sanctions evasions across the bloc until after Russia's full-scale invasion of Ukraine last year. Until such a proposal is adopted, however, each member state can continue to set its own standards for enforcement.

Although Cyprus passed a law in 2016 making the violation of EU and U.N. sanctions punishable by imprisonment and fines of up to 300,000 euros (around \$320,000), it has long had a reputation for lenient enforcement, and has consistently featured in international money laundering and financial crime scandals.

“Cyprus is very well known as a jurisdiction that's got pretty lax anti-money laundering regulations,” Kenyon told OCCRP. “That's why the Russians love it.”

The Cypriot government spokesperson said suggestions the country had undermined sanctions with weak enforcement were “simply ludicrous.”

In the U.S., Malofeev's associates have run into trouble for helping the oligarch evade sanctions. In June 2015, Malofeev conspired with a U.S. attorney to produce backdated documents purportedly showing that he had transferred his shares in a Texas-based bank to a Greek business partner before sanctions went into effect, according to a U.S. Justice Department indictment.

John Hanick — a former Fox News producer who helped Malofeev set up Tsargrad TV — was charged with violating sanctions and faces a maximum prison sentence of 25 years. Malofeev faces an even steeper sentence but is unlikely to be extradited, though a U.S. judge ordered \$5.4 million of his assets seized in February.





Credit: Reuters/Alamy Stock Photo

The Tsargrad TV studio in September 2021.

Chris Tooke, a specialist on political risk at global consulting firm J.S. Held, said that legal actions against enablers in such cases could prevent future sanctions violations.

“Despite the reputational risks, some people are still going to do it if they think they can get away with it. But if they see robust examples of enforcement in the press, it might dissuade some of them,” Tooke told OCCRP.

Before the invasion of Ukraine last year, many EU companies were still willing to take the risk of serving sanctioned clients, assuming they would not be caught, Tooke said.

“If enforcement is ineffective — if businesses are willing to take the risk of continuing to service these individuals — then the whole sanctions regime just doesn’t work,” he said.

Fact-checking was provided by the OCCRP Fact-Checking Desk.

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GreekReporter.com › Greek News › Cyprus › Cyprus Braces For New US and UK Sanctions

Cyprus Braces For New US and UK Sanctions

By **Alexander Gale** May 18, 2023



*Cyprus is expected to receive a list of sanctions from the US and UK targeting individuals and entities associated with Putin's government.
Credit: Public Domain*

The Republic of Cyprus is bracing for another round of sanctions, this time levied by the United States and the United Kingdom. The sanctions are believed to be in connection with the war in Ukraine and will likely be targeted at Russian oligarchs with connections to the government.

Russia's invasion of Ukraine and the Western response has put Cyprus in an awkward position. The island is sometimes nicknamed the "Moscow on the Med" due to its sizeable community of Russian expatriates, some of whom happen to be very wealthy.

However, as a member of the European Union, Cyprus is expected to conform to the sanctions regime against Russia. Nevertheless, the announcement of a forthcoming sanctions package has reportedly caused some alarm amongst the Cypriot business community, with fears that jobs and livelihoods could be affected.

On Friday, it is expected that both the [United States](#) and the [United Kingdom](#) will [release lists of individuals](#) in Cyprus who will be placed under sanctions for allegedly violating the [restrictions](#) that have been imposed on Russia's access to the international financial system.

Those who will be affected by the sanctions will likely stand [accused](#) of aiding [Russian oligarchs](#), individuals, and organizations tied to [Putin's government](#) through the use of intermediaries and their businesses.

The news that further sanctions are expected has reportedly been met with panic in Cyprus. In a bid to avoid financial fallout, over 500 Cypriot companies have contacted the Registrar of Companies and Intellectual Property, seeking the relevant information for them to be able to cut ties with sanctioned entities and individuals.

It is unclear just how much the sanctions will impact businesses and employees in Cyprus. Due to the complex nature of supply chains and business contracts, even those who have not knowingly forged ties with sanctioned individuals and entities are worried that they might be caught in the crossfire.

A pervasive issue

This is not the first time that sanctions have caused a headache for the Cypriot government. Last month, Cyprus received an [800-page document](#) that listed individuals on the island accused of aiding Russian billionaire Alisher Usmanov's efforts to conceal his wealth.

The dossier was intended to be used as a toolkit by the Cypriot government for the implementation of sanctions and auditing. Indeed, [President Nikos Christodoulides](#) said that his country would clamp down harder on individuals associated with Usmanov and Russian oligarchs.

"It's imperative we approach this issue with the appropriate seriousness and do what we can so as not to allow anyone to blacken the country's name," Christodoulides said. "And I am certain that you who represent our economy realize and share the need to finish up with this matter and move into the new era."

The Cypriot President has explained that Cyprus must take sanctions breaches seriously in order to protect the island nation's business interests.

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